Do trade creditors increase employment risk in firms with a works council?

Balbinder Singh Gill[1]
Temple University

Kose John
New York University

Abstract

In this paper, we investigate whether or not trade creditors use the employment risk channel to protect the value of their claims in buying-firms, specifically those with works councils that are empowered to specify the criteria, the protocol, and the pecking order for laying off employees. We find that the works councils do not act as employment insurers by blunting the disciplinary role of employee layoffs. Furthermore, the evidence suggests that trade creditors prefer to fire older employees. The disciplinary effect of trade debt appears to be weaker when employee-leadership within the works council is less fractured or have many younger worker representatives. The results appear to be robust for alternative mechanisms.

JEL Classifications: G32; J50, J53
Keywords: Trade creditors, employee representation, labor rights

[1] Kose John is at New York University Stern School of Business: kjohn@stern.nyu.edu . Balbinder Singh Gill is at Fox School of Business of Temple University: balbindersgill@gmail.com. The authors are grateful to Jongmoo Jay Choi, Lalitha Naveen, Oleg Rytchkov, Sudipta Basu, Yuanzhi Li, Yue Qiu, and seminar participants of the Fox School of Business of Temple University for their contributions. We acknowledge the research support of the Fox School of Business of Temple University. All errors and omissions are our own.

"Union membership is seen as an insurance against what can go wrong; it could be described as the 'cheapest lawyer'."

Valeria Pulignano & Nadja Doerflinger[2]
Centre for Sociological Research, KU Leuven

A fundamental question that is still critical in both finance and labor economics is whether leverage increases employment risk. There are two main theories that attempt to clarify this relationship. The first theory is the *debt disciplinary theory*. According to the traditional stakeholder agency theorists, a conflict of interest exists between employees and shareholders: employees demand a "fair share" of the firm's profits to maximize their own utility through a combination of higher wages, greater job security or better working conditions, but this comes at the expense of the shareholders' profits (Hill and Jones, 1992; John, Knyazeva, and Knyazeva, 2014). This theory holds that employers tend to discipline their employees for this behavior by holding more leverage, as future cash flows are not as accessible to labor in more leveraged firms without increasing employment risk (Jensen and Meckling, 1976; Jensen, 1986). The second theory, the *employment security theory*, holds that firms will hold less debt when employees are willing to accept lower wages (Berk, Stanton and Zechner, 2010). Scholars have worked a great deal in order to empirically document the relationship between leverage and employment risk, but have largely remained silent on how different type of creditors individually can pressure firms to protect the value of their claims by increasing employment risk in firms. In this paper, we study if trade creditors, important providers of short-term financing, can protect the value of their claims in buying-firms by increasing employment risk.[3]

Firms must weigh the benefits of using trade debt financing against the costs of not guaranteeing employment when deciding whether to protect the claims of trade creditors by increasing employment risk. Prior research has documented that the buying-firm tends to use more trade debt financing because it allows them to pay their purchases after delivery. Trade credit is often unsecured (Cuñat and Garcia-Appendini, 2012). Suppliers can prevent the

[2] Main campaigns and actions promoted by trade unions in Belgium: strengths and weaknesses. Presentation at the YOUnion - Union for Youth Final Conference (Brussels 2014).

[3] Trade debt tends to be an important source of financing not only for US firms but also for European firms. For example, Garcia-Turuel and Martinez-Solano (2010) document that from, 1996 to 2002, the average trade debt was in 13%, 16%, 19%, 27%, and 29% of the liabilities of small and medium-sized firms in Finland, Sweden, UK, Belgium or Greece and France. With respect to US firms, several studies find that trade credit represents at least 20% of the liabilities of an average US firm (see Rajan and Zingales, 1995; Ivashina, Iverson, and Smith, 2014).

buying-firm's potential default by insuring them against liquidity shocks and financial crises through providing or extending trade credit (Cuñat, 2007; Love, Preve and Sarria-Allende, 2007). It also allows buying-firms to substitute trade credit for bank credit when bank credit is scarce, as it often is during financial crises (Molina and Preve, 2012). However, if firms accept this help, they may encounter numerous costs when trade creditors pressure them to lay off employees. For example, employees who are laid off can take with them valuable knowledge and expertise gained through experience. Firms face other costs related to employee layoffs as well, such as the costs of employing temporary workers or overtime. The firm may also face high costs when replacing dismissed workers if the position requires training, possibly exceeding half of an employee's annual pay (Mitchell, Holtom, and Lee, 2001). Moreover, former employees may face significant costs during their unemployment, such as a loss in consumption, psycho-social problems caused by long delays before reemployment, etc. (Agrawal and Matsa, 2013). Furthermore, employees optimally choose to invest less in firm-specific human capital when their working environment is insecure (Butt-Jaggia and Thakor, 1994).

To prevent trade creditors from increasing employment risk, there must be a degree of mutual understanding and collaboration between (opportunistic) management and its employees. To improve and facilitate this, the Belgian government has introduced a new governance body: the works council, a joint body at the level of the firm, with both employer and employee representation. The works council is responsible for many things related to employment, notably the ability to direct employers in the manner of how layoffs are to occur. Although it is chaired by an employer representative, the employee representatives always form the majority in the council. The works council representation is elected every four years, and if a firm has a works council it *must* organize a works council representation election. The firms must employ at least an average of 100 workers in the year before the election of the works council representation to be eligible, and firms eligible for works council representation are only exempted when the representative unions did not submit a list of candidates for the works council representation election (Blanpain, 2012).

It is important to investigate the effect of works councils on the relationship between trade creditors and employment risk for two main reasons. First, the works council has extensive co-determination (veto) rights related to employment matters.[4] For example, they define the

[4] Contrary to Belgium, US trade unions are less able to protect the interests of labor because the US labor law does not grant these trade unions any co-determination and extensive information

general criteria and order of dismissal (i.e. the pecking order of employee layoffs), and the employer is legally obligated to follow these terms. Furthermore, the employer must report each round of employee layoffs to the works council to allow them to evaluate whether the employer has followed the pecking order of employee layoffs. However, the employer is not legally required to disclose the reasons of dismissal to the members of the works council. Additionally, works councils have the legal power to decide when management can relieve elderly employees from work by forcing early retirement. They often do this when they can negotiate more favorable severance packages for them. Management is obliged to hire a replacement. *Second*, the works council also has extensive information rights on financial, economic and employment related issues. The employer is obligated to provide this information periodically to the members of the works council at no cost (Blanpain, 2012). This also lowers costs for employee representation within the works council to monitor the firm's management.

From a theoretical point of view, it is not clear how works council will react when trade creditors pressure the firm's management to protect the value of their claims by increasing employment risk. Works councils could potentially seek to tie management's hands by making it more difficult to dismiss workers when management cannot justify the unreasonably high number of employee layoffs.

In this paper, we consider employee layoffs and the different type of employee layoffs as the methods that firms can use to respond to the request of trade creditors to protect the value of their claim. The theoretical discussion of these possible responses leads to testable hypotheses by considering the economic links between the competing incentives of trade creditors, management, and works council. We test these hypotheses on a sample of 146,215 Belgian firms (124 public firms and 146,091 privately owned firms), with 642,045 firm-year observations, over the period 2004 to 2010. The results indicate that works councils are not able to act as an employment insurer against unfair dismissals when trade creditors want to pressure the management of the firm to protect the value of their claims. Trade creditors do pressure management of firms with a works council to take benefit of the defined pecking order of employee layoffs. The results are robust for alternative mechanisms, such as financial distress, performance declines, firm financing constraints, the social election of the works council representation, the introduction of national interest deduction, and financial crises that could

rights related to employment issues. Moreover, negotiations between unions and employers do not mandate agreement (Baker and McKenzie, 2009).

potentially explain the observed link between works council, trade debt and the likelihood of only employee layoffs and the type of employee layoffs.

One possible critique of these findings is that we are not comparing like with like, i.e. the study compares *apples* (firms without a works council) and *oranges* (firms with a works council). This is because firms with a works council are larger firms, while firms without a works council are smaller firms. Due to the legal nature of the works council, we cannot use propensity score matching to compare firms for groups that share similar observable characteristics. To address this critique, we employ three new tests to explore the subsample heterogeneity of the relationship between works council, trade creditors, and the likelihood of only employee layoffs. First, we investigate whether the protection of the value of the claims of trade creditors by the firm is significantly different when firms with a works council are compared to firms that did not install a works council. Firms did not install a works council when their unions did not submit a list of candidates for the election of employee representation within the works councils. It appears that the protection of the value of the claims of trade creditors by increasing employee layoffs increases in firms with a works council relative to firms that refused to install a works council.

Second, we investigate whether the protection of the value of the claims of the trade creditors by the firm depends on the characteristics of the employee representation. The elected employee representation earned a mandate from the employees of the firm to increase their utility by principally pushing their wages above the market wage and by protecting working men and women against dismissal. This is preferably achieved through collaboration with the employer representatives within the works council framework (Booth, 1995; Bennett and Kaufman, 2008; Blanpain, 2012). We investigate the effect of the characteristics of the employee representation on the protection of the value of the claims of the trade creditors by identifying the political and socio-economic determinants of the employee representation within the works council. We find that trade creditors are less able to take the advantage of less fractured employee representation or when employee representation consists of more younger workers to protect the value of their claims by pressuring management to increase the likelihood of employee layoffs and the likelihood of early retirement layoffs to protect the value of their claims.

Finally, we carry out one important test that would provide evidence that our estimates reflect a causal, instead of endogenous, link between works council, trade debt, and the likelihood of only employee layoffs, and the type of employees. We address the endogeneity

concerns of trade debt and works council by estimating the traditional instrumental variable regression model, and find that trade creditors pressure management of buying-firms to protect the value of their claims by increasing employee layoffs and early-retirement layoffs.

The aim of this paper is to provide evidence that trade creditors find it more difficult to pressure buying-firms with works councils to protect the value of their claims. This research contributes to the trade credit literature by showing that suppliers can use a new channel to force payment, namely by increasing employee layoffs but that this channel has less efficacy with firms that have a works council. Petersen and Rajan (1997) provided evidence that suppliers can force repayment of the credit by threatening to cut of future supplies in case of deterioration of the creditworthiness of the buying-firm, or possible seize and resale of the supplied goods. Well-informed suppliers can also sell off their trade receivables when the buying-firm is expecting to file for a bankruptcy procedure and their recovery rates are expected to be low (Ivashina and Iverson, 2014).

This paper also contributes to the labor and finance literature by investigating the effect of works council codetermination rights on trade debt. We add to the literature that documents that organized labor may have different objectives and incentives from value maximizing shareholders and capital preserving and enhancing creditors. This paper also contributes to the stakeholder bargaining literature (see Hill and Jones, 1992; Donaldson and Preston, 1995; among others) by showing that employees can establish a credible voice to protect and defend the interest of employees by concentrating power in an institutional corporate governance mechanism such as the works council.

This paper also contributes to the corporate governance literature by providing additional evidence that works council are less able to effectively balance the interests of employer and employees. For example, they are less able to prevent unfair dismissals, but may be willing to send elderly workers to early retirement if necessary to keep the relationship between suppliers and the firm intact. Similarly, Han Kim, Maug, and Schneider (2017) find that labor representation with co-determination rights in German firms enhance employee welfare by capturing all the gains of improved risk sharing without damaging shareholders. However, trade unions in corporate governance enhance mechanism such as board of directors do not always protect the interests of their employees. For example, trade unions included in boards of directors of US firms often do not try to maximize the economic welfare of their union members but provide support to management for future wage and benefit concessions (Douglas, 1982).

This paper also contributes to the existing literature of employment layoffs. This paper investigates the disciplinary effect of trade creditors on employee layoffs, while Hanka (1998) among others investigates the disciplinary effect of leverage on employee layoffs.

The rest of this paper is organized as follows. Section 1 reviews the relevant theories in more detail and develops testable hypotheses. Section 2 describes our data, sample selection procedure, and the research design. Section 3 presents our empirical analysis of the relationship between trade debt and works council and the likelihood of employee layoffs and the type of employee layoffs for the full sample of firms. This section also presents the empirical analysis of the heterogeneity in the relationship between works council, trade credit, and the likelihood of employee layoffs and the type of employee layoffs in different subsamples. Section 4 presents the results from a battery of robustness tests. Section 5 concludes the paper.

1. Literature review and hypotheses development

To simplify our theoretical analysis between the competing incentives of organized labor, trade creditors, and corporate management, we define employment risk as the probability that the firm lays off employees.

A. Do trade creditors increase unemployment risk at firms to protect the value of their claims?

We first start with the discussion why firms are willing to take up costly trade credit. First, trade credit is often seen as an expensive form of financing for buying-firms. However, it allows the buying-firm to pay their purchases after delivery, often at a zero-explicit interest rate, and often unsecured. More creditworthy buying-firms will prefer to pay cash because they find the trade credit too expensive. Suppliers acknowledge that trade credit is an expensive form of financing and buying-firms differ in their credit ratings. Suppliers optimally responds by making trade credit more accessible, including lower credit quality buying-firms, by reducing the price of trade credit. This is done by offering the same trade credit terms to all buying-firms. Within this setting trade credit is subsidized to price discriminate in favor of the low-quality buyers (Cuñat and Garcia-Appendini, 2012). Another reason suppliers are willing to make trade credit more accessible to lower credit quality buying-firms is their competitive advantage over banks in liquidating collateral. By contrast to costly collateral liquidation, suppliers are more able to quickly repose the products and resell them to others if the buying-firm should default (Cuñat and Garcia-Appendini, 2012).

Second, it pays to take up costly trade credit for the buying-firm when the buying-firms is likely to receive the necessary time to verify the quality of the delivered products before deciding whether to make any payment and accept the products from the supplier or to return the products in case it does not satisfy the buyer's expectations. This is because information asymmetries between the supplier and the buying-firm tends to exist (see Cuñat and Garcia-Appendini, 2012; Klapper, Laeven, and Rajan, 2012).

Third, it also pays to take up costly trade credit when the buying-firm reveals that they do not have access to cheaper bank finance when they forego the trade credit discount or incur a late payment penalty associated with the trade credit. This way it becomes clear earlier to sellers that the buying-firm has a high risk of default than when no trade credit is offered (i.e. pure cash payments). However, it is also true that suppliers do not offer more trade credit to buying-firms when they have established relationships with their financial institutions (Cuñat and Garcia-Appendini, 2012).

Fourth, it is beneficial to take up costly trade credit when suppliers can act not only as debt collectors but also as insurance providers when suppliers tend to decide to give the buying-firm extra time to repay. This will foster the growth of the buyer and guarantee its survival from temporary liquidity problems. However, suppliers in turn expect an increase in the flow of sales of the buying-firm (Petersen and Rajan, 1997). Larger, more financially strong suppliers tend to insure the buying-firm against liquidity shocks that could endanger their survival by providing or extending trade credit as needed (Cuñat, 2007; Love, Preve, and Sarria-Allende, 2007). In this setting, trade credit is a useful substitute for alternative sources of financing when the latter is unavailable (Molina and Preve, 2012).

Fifth, trade credit can be seen as a complement to bank credit when suppliers are willing to provide or extend trade credit to the buying-firms. It provides a valuable signal to the financial institutions of the credit-worthiness of the buying-firm, and hence increases the buying-firm to get (future) financing for positive net present value projects (Biais and Gollier, 1997).

After having established theoretically that firms may use costly trade credit, it is important to provide theoretical reasons why a supplier would be likely to pressure a buying-firm to protect the value of their claims by increasing employment risk. Burkart and Ellingson (2004) endogenize in their theoretical model that suppliers among other finance providers are better able to control buyers' actions by reducing moral hazard risk. Their reasoning is as follows.

Suppliers obtain information about the purpose of the supplied inputs for free when they are delivering goods to the buying-firm, and hence, are better fitted to control whether the buyer is undertaking a productive activity.[5] The supplier is more willing to provide trade credit when the buying-firm is undertaking more productive activities. This in turn lowers the moral hazard risk and increases trust between supplier and the buying-firm. By contrast, banks must incur a monitoring costs to avoid any cash diversion (Molina and Preve, 2012).

If the buying-firm is not undertaking a productive activity than there is a higher risk of possible trade debt default. The importance to undertake a productive activity increases when the buying-firm has more trade debt outstanding. The literature documents that suppliers can act in two different ways when they are from the opinion that the buying-firm is not undertaking a productive activity. First, suppliers can start to monitor the buying-firm more intensively at a lower cost by visiting the buying-firm more often. Second, they can threaten to cut off goods and force repayment of the credit by threatening to cut of future supplies in the case of the deterioration of the creditworthiness of the buying-firm or possible seize and resale of the supplied goods. However, the seizure and resale of the supplied products becomes more difficult when the buying-firm has already transformed or sold the supplied products (Petersen and Rajan, 1997).[6] The buying-firm may react on the increased monitoring and the treat of suppliers to seize the products by starting to make the trade-off between the fulfillment of labor commitments and the fulfillment of trade debt commitments. On the one hand, trade creditors provide the firm with finance and in exchange expect their trade debt to be repaid on time (trade debt commitments). On the other hand, employees provide the firm with time, skills and fulfil their human capital commitments (Hill and Jones, 1992; Bae, Kang, and Wang, 2011). In exchange, they expect the firm to fulfill their labor commitments (utility maximalization). Additionally, trade creditors expect that management of buying-firm will reassure them that they are able to protect the value of their claims. Trade creditors give the management of

[5] The authors do not define a productive activity as such. We can interpret a productive activity very broad. This can include a quick sale of the delivered products or transform the products by using a manufacturing process.

[6] Ivashina and Iverson (2014) provide evidence that more informed suppliers can decide to sell their claims on the firms ahead of less informed suppliers and other creditors when lower debt recovery rates in a US bankruptcy procedure are expected. The supplier may choose to sell the receivables of the borrowing firm instead of spending resources and time to pressure the management to force a payoff of their claims by increasing employment risk. Moreover, trade credit is in general unsecured in Belgium. As a result, secured creditors have priority to unsecured trade creditors in Belgium. Additionally, there are no trade credit committees in the Belgian bankruptcy procedure.

buying-firms the possibility to blame the trade creditors for large scale employee layoffs. In turn, management can reassure trade creditors by guaranteeing to generate sufficient cash flows by reducing operating costs, and hence making labor flexible (Falato and Liang, 2016). One way to make labor more flexible is by laying off employees.

It is also important to theoretically discuss whether or not trade creditors may behave differently when employee layoffs are broken down into the different type of employee layoffs. Trade creditors may pressure buying-firms with more outstanding trade debt to construct age-specific dismissal practices to protect the value of their claims. For example, the buying-firm with more trade debt outstanding can resort to dismiss pricey older and higher paid workers. To prevent age-based layoff discrimination, the Belgian government allows the firms to dismiss older workers by sending them to mandatory early retirement. There is no specific defined minimum age for sending older workers to mandatory early retirement. However, the minimum age to send an older worker to early retirement can be lowered to fifty in industries experiencing structural problems (Pestieau and Stijns, 1999). These dismissed older workers are not entitled to receive the statutory redundancy payment (Karakaya, 2008; Blanpain, 2012). However, these dismissed older worker will receive an unemployment compensation and a supplement from the employer until the dismissed worker reaches his or her official retirement age. This supplement must be at least one half of the difference between the last net wage and the unemployment benefit (Jousten and Tarantchenko, 2014). Firms must hire a job-seeker to replace each dismissed worker by these mandatory early retirement schemes (Karakaya, 2008; Blanpain, 2012). This type of employee layoffs can be seen as an effective manner for buying-firms with more trade debt outstanding to make labor more flexible by using a less costly strategy of dismissing older workers. By contrast, the need to dismiss older workers may be less necessary when the buying-firm has less outstanding trade debt.

Our first two hypotheses can be stated as follows:

H1: The share of trade credit is positively related to the likelihood of employee layoffs (trade debt moral hazard hypothesis).

H2: The share of trade credit is positively related to the likelihood of having mandatory early retirements.

B. Can the works council in the buying-firm prevent trade creditors from increasing employment risk? [7]

Traditional stakeholder agency theorists argue that information asymmetry problems between employers and employees tend do exist when employees do not have full and free access to (critical) information about the firm. As a result, the employees are less able to control whether the employer is fully committed to maximizing their utility (Hill and Jones, 1992). To solve this potential conflict of interest between an employer and its employees, the Belgian labor law has introduced the works council to increase collaboration and trust between the employer and its employees.

A works council is a joint body that represents both an employer and its employees. The works council is elected every four years by secret ballot when the enterprise is usually employing on average a minimum of 100 employees in the preceding fiscal year.[8] Trade unions must submit lists of candidates for the worker representation within the works council.[9] The list of candidates must represent the blue and white-collar workers in proportion to their numerical strength in the workforce of the enterprise. A works council will not be installed if the trade unions did not submit a list of candidates for the election of the worker representation within the works council. The employee representatives enjoy special protection against dismissal for the entire term. All employees – regardless of whether they are union members – have the right to vote (Blanpain, 2012). The number of employer representatives can never be more than the number of employee representatives within the works council. The employer can freely decide whom he wants to represent him amongst the managerial employees except for the prevention advisor. The chair of the works council is always a representative of the employer, while the secretary of the works council is a member of the employee representative from the employee leadership coalition (Fulton, 2015; Blanpain, 2012). Furthermore, the Belgian labor law also stipulates that a works council is required when the average number of employees fall below

[7] This discussion of the law and regulations to set up works councils in Belgium is based on Labour Law in Belgium from Blanpain (2012). Please refer to Blanpain (2012).

[8] The Belgian Labor Law defines an enterprise as the technical unity of exploitation. The technical unit is different to the enterprise taken as a legal entity (Blanpain, 2012). Due to data limitations, we calculate and aggregate the effect of the works council at firm level instead of enterprise level.

[9] The average trade union density, measured as the ratio of wage and salary earners that are trade union members to the total number of wage and salary earners, is 54.30% over the sample period (from 2004 to 2010). It also shows that more than half of the Belgian workforce is unionized. Data source: OECD.

100. The competence of the works council for these firms shall be transferred to the committee for prevention and protection at work (Blanpain, 2012).

The main purpose of the works council is to influence the managerial decision-making in four different ways. First, managers must freely disclose to the works council all information available concerning any economic, social, and financial matters that could (seriously) affect employment within the firm. Depending on its nature, information must be disclosed to the members of the works council periodically, annually, or occasionally. The manager must disclose information annually to the works council about both the current state and the prospects of the firm. This information allows the works council to form an opinion on the profitability, liquidity, and the financial stability of the firm, but also on the employment within the firm. The manager must inform the works council by a written summary at least every three months on the progress of executing their business plan and the anticipated evolution of sales, market developments, and employment-related issues. The manager must also provide information to the works council whenever there is major event (i.e. mergers, acquisitions, restructurings, etc.) that has important consequences for the workforce. The works council can study, discuss, raise questions, and demand explanations from the management based on the provided information. Second, the works council has advisory and consultative competence concerning economic and financial (i.e. work organization and productivity) and social matters. The management is not legally obliged to incorporate any advice received from their consultations with the works council in their decision-making. Third, the works council has the social competence to draw up and change the work rules. Fourth, the works council has the legal power, to decide upon the order of dismissal and re-engagement. Belgian labor law does not provide any formal guidance on how to conclude drawing these orders of dismissal and re-engagement, however, it is generally assumed that decisions are made unanimously (Blanpain, 2012).[10]

The order of dismissal to be respected considers, among other things, the seniority, age, and family situation of the employees. However, employers are still allowed to decide the reasons for dismissal. This is because an employer does not have to provide any formal justification for dismissal to the members of the works council. The employer is obliged to report each dismissal to the members of the works council to allow the council to control whether the employer has followed the general criteria and order for dismissal (Blanpain, 2012;

[10] We explore and discuss in detail the impact of employee representation consisting of members from unions representing different ideologies on the relation trade credit and employee layoffs in the empirical section of this paper.

Jevtic, 2012).[11] The dismissal of an elderly worker that is made without following the *pecking order* of employee layoffs is legally invalid, but the employer is still allowed to dismiss workers for gross misconduct.

Lack of information transparency between the employer and the works council indicates that it is more difficult for employer representatives to convince employee representatives within the works council in firms with more trade credit to change the criteria of dismissal to allow more (unnecessary) employee layoffs. In this setting, it is more likely that the employee representatives within the works councils will use their veto rights (codetermination rights) to protect the interest of their employees by preventing any (future) loosening of the dismissal criteria. Moreover, each dismissal of a worker weakens directly the (future) bargaining power of the union. As a result, we expect that the presence of a works council weakens the explanatory power of the disciplinary hypothesis. Works council decreases the positive relationship between trade credit and employment risk for regular employee layoffs.

We think it is also important to highlight that the different types of employee layoffs could be important to explaining the behavior of the works council with respect to the relationship between trade credit and employment risk. Works councils may, under certain circumstances, allow trade creditors to increase employment risk when employees are dismissed by using early retirement schemes. This type of employee layoff is often seen as more acceptable because the representatives of the employer must first find an agreement with the representatives of the employees on the conditions and terms of the dismissal of the elderly worker within the works council. The dismissal of an elderly worker that is made without properly consulting the employee representation within the works council is legally invalid. None of these dismissed workers are legally entitled to the statutory redundancy payment (Karakaya, 2008; Blanpain, 2012). However, these dismissed workers are entitled to receive, in addition to the unemployment benefit, a supplement by the firm to cover their loss in wages until they reach the legal retirement age, and the supplement must be at least one half of the difference between the last net wage and the unemployment benefit (Jousten and Tarantchenko, 2014). As a result, it is more likely that the employee representatives will negotiate favorable financial conditions for potential retirees as they are unlikely to find a similar job. The employer representation is

[11] Notable exceptions are blue-collar workers, workers dismissed for gross misconduct, or dismissals of protected employees. Blue-collar workers can ask an extensive reasoning for dismissal (article 63 of the Law on employment contract (3 July 1978)), but is rarely done in practice.

more willing to accept the terms and conditions proposed by the employee representation within the works council because it allows them to dismiss fewer (productive) older and higher wage-earners. However, firms must hire a job-seeker to replace each dismissed worker by these pre-retirement schemes (Karakaya, 2008; Blanpain, 2012). As a result, we expect that works councils strengthen the prediction of the disciplinary hypothesis, and, further, that they increase the positive relationship between trade credit and employment risk for early retirement dismissals.

Our final two hypotheses can be stated as follows:

> *H3: Works council increases the positive effect of the share of trade credit on the likelihood of employee layoffs.*
>
> *H4: Works council increases the positive effect of the share of trade credit on the likelihood of early mandatory retirements.*

2. Empirical design, sample construction, and data

In this section, we will go over the empirical design, provide details of the selection of the sample, and discuss the construction of the variables.

2.1. Empirical Design

To begin, we estimate the pooled logistic regression models. The dependent variable of these logistic regression models is equal to one if there are employee layoffs or more early retirement layoffs.[12] To be consistent with the regression analysis throughout this paper, we lag all of the independent and control variables by one year. This is also because the information disclosed by the management to the members of the works council would not yet be fully reflected in the decision making of the works council.[13] Throughout the analysis, the independent variable is trade debt, and we include the following firm-level control variables: labor productivity, permanent employment, blue-collar employment, average employee pay, firm size, firm age, financial distress, physical capital intensity, profitability, and public quoted. Due to the nature of nonlinear regression models, we cannot control for unobserved heterogeneity by including year, industry, or firm fixed effects in the regression models.

The estimated coefficients of the logistic regression model must be interpreted with care. As a result, we calculate and report the average marginal effects of the explanatory variable on the conditional probability of employee layoffs (more early retirement). For continuous explanatory variables, we report the derivative of the conditional probability of employee layoffs (more early retirement) with respect to the continuous variable. For dichotomous explanatory variables (i.e. works council and public quoted dummies), we report the discrete change in the conditional probability of employee layoffs (more early retirement) from the base level (i.e. dummy is 0). All the remaining explanatory variables are at their sample values. Standard errors are calculated by using the Delta method.

To test Hypotheses 3 and 4, we extend the baseline logistic regression model by including the interaction term *works council x trade debt*. According to Norton, Wang, and Ai (2004),

[12] We do not have sufficient data to sort firms by the combination of majority of layoffs are early retirement layoffs and asset fire sale.

[13] As mentioned, managers must provide firm-specific information to the members of the works council on a periodically (i.e. at least every three months), annually or occasionally basis. For example, the labor law also requires that the management should discuss the annual information with the members of the works council within three months after the end of the financial year and preferable before the general assembly of shareholders (Blanpain, 2012).

and Karaca-Mandic, Norton and Dowd (2012), we should interpret the results of the interaction between the works council and trade debt with caution because of the nonlinearity of the pooled logistic regression model specification. Following their suggestions, we calculate the cross derivative as the change in the marginal effect of the works council on the conditional probability of employee layoffs (early retirements) with the remaining explanatory variables at their sample values. We calculate the standard errors by using the Delta-method.

2.2. Sample Construction

The main source of our firm-level data is the 2011 edition of BELFIRST. BELFIRST is a commercial database provided by Bureau Van Dyck Electronic Publishing, and contains detailed annual account information on around 1 million firms in Belgium and more than 20,000 firms in Luxembourg with up to 10 years of history. This database does not suffer from any selection bias with respect to personnel information as in the Compustat database, which can be attributed largely to looser reporting and auditing requirements for personal information relative to financial information (Hallock, 1998). By contrast, every Belgian firm that employs staff must complete the section entitled "Social Balance Sheet" in their annual reports. The Social Balance Sheet contains detailed information about the composition of the workforce of the firm and workforce changes (movements) during the year.

The BELFIRST database provides information of two categories of variables: static and annual variables. Accounting data is annual. We use social-balance sheet data to construct the workforce-specific control variables (i.e. labor productivity, permanent employment, blue-collar employment, average employee pay). Further, we use balance sheet and income statement data to construct the remaining firm-specific variables (firm size, financial distress, physical capital intensity, and profitability). We use the company's administration data to construct the firm age variable. We also use static variables such as industry codes and public quotes. These static variables require the disposition of the BELFIRST database per cross-section (year). We limit concerns with respect to survivorship bias by allowing firms to enter and exit the sample over time.

We use the works council database from the Belgian Federal Public Service Employment, Labor, and Social Dialogue to manually classify whether firms in the sample have installed a works council. Each firm that has decided to install or renew the works council must also provide detailed information on the composition of the employee representation within the works council after each election year to the Belgian Federal Public Service Employment,

Labor, and Social Dialogue. Firms with previous a works council installed but did not re-elected the works council or when the competence of the works council is transferred to the committee for prevention and protection at work after the election for works council installation must also report this to Federal Public Service Employment, Labor, and Social Dialogue department. Furthermore, as mentioned in the literature review section, the Belgian Labor Law defines an enterprise as the technical unity of exploitation. The technical unit is different to the enterprise taken as a legal entity (Blanpain, 2012). We do not have enterprise-level data available and the available accounting data is only at firm-level. As a result, we will aggregate the works council of the technical entity to the firm level. More precisely, if a legal technical entity of firm x has installed a works council, then firm x has installed a works council. Moreover, we need to limit the sample period from 2004 until 2010 because we only possess information of works council elections in 2004 and 2008.

Next, our process for cleaning the data is as follows. First, we eliminate the observations of firms when there are obvious errors in their financial statements in the BELFIRST database. This is the case when the share of blue-collar or permanent employment in total firm employment is greater than 1, psychical capital intensity is less than 0, and firms have no employees. Next, we drop all observations with missing values, and deflate all variables in levels such as firm size by using the GDP deflator (these variables are expressed in constant euros as of 2004).[14]

With respect to potential outliers, there is not a generally accepted method for dealing with them. According to Frank and Goyal (2007), there are three kinds of corrections in capital structure research that deal with this problem. The first method is a rule of thumb (i.e. winsorizing the variables at the 1st and 99th percentile). An important disadvantage is that it is arbitrary because different studies tend to employ different rules of thumb. The second method is to winsorize the variables. Frank and Goyal (2005, 173) state, "It is particularly common to winsorize each tail at 0.5% or 1%. … This procedure has the advantage that it is more systematic than pure rules of thumb, and it is easier to have consistency across papers." As a result, we present the results in this paper by winsorizing all the 1% and 99% tails for all the firms in the sample. Finally, it also tends to be common practice to define outliers when they are excluded from the interval mean plus/minus three standard deviations. However, this method is

[14] While most of the firm-specific variables are ratios, variables in levels (such as size) are inflated by the GDP deflator and are expressed in 2004 euros (Beck, De Jonghe and Schepens, 2013).

problematic because it is well known that both the standard deviation and the mean tend to be very sensitive to outliers (Leys, Klein, Bernard, and Licata, 2013). Finally, we obtain an unbalanced panel of 146,215 Belgian firms (124 public firms and 146,091 privately owned firms) with 642,045 firm-year observations for the period from 2004 to 2010.

2.3. Explanatory variables

The first independent variable is trade debt, calculated as the ratio of accounts payable to total debt. The second independent variable is the works council dummy, which equal to one for firms with a works council and equal to zero otherwise.

We include a permanent employment measure, defined as the ratio of workers with a long-term labor contract to total full-time equivalent (hereafter FTE) workers. We expect firms to dismiss fewer permanent employees because (1) they tend to be loyal and productive employees (Cronqvist, Heyman, Nilson, Svaleryd, and Vlachos, 2009); (2) possess valuable firm-specific knowledge; and (3) have higher dismissal costs because the notice payment must be mutually agreed upon (Cockx and Van der Linden, 2009).

We also include the average employee pay, measured as the natural log of the ratio of FTE labor costs to the average total FTE workers. We expect a positive (negative) relationship between average employee pay and employee layoffs. Employee layoffs are often seen as the main source of labor cost reductions to maintain production capacity. We also expect a negative association between average employee pay and employee layoffs when managers are colluding with workers to protect the interests of the workers (Pagano and Volpin, 2005; Atanassov and Kim, 2009).

We also include blue-collar employment, defined as the ratio of FTE blue-collar workers scaled to total FTE workers. The effect of blue-collar employment on employee layoffs and is a priori ambiguous. On the one hand, providing employment insurance to blue-collar workers is costly to firms as it limits the firm's ability to anticipate changes in technology or consumer taste. Additionally, firms who provide employment insurance often tend to hold lower levels of debt. As a result, firms will only provide employment insurance to more educated and highly skilled employees which will encourage investments in firm-specific human capital. These investments will enhance productivity among these employees and are more difficult to dismiss than their blue-collar workers. Blue-collar workers have less human capital to invest in firm-specific purposes (Kim, Maug, and Schneider, 2017). Moreover, blue-collar workers receive less compensation than white-collar workers due to the shorter notice

period in the event of dismissal (Blanpain, 2012). As a result, we predict a positive relationship between blue-collar employment and employee layoffs.

On the other hand, employers may not choose to dismiss blue-collar workers, but instead choose to apply the temporary unemployment scheme for blue-collar workers in Belgium. The Belgian Labor law allows a temporary suspension of blue-collar work for economic reasons. This temporary unemployment scheme tends to benefit all parties. With respect to blue-collar workers, they are not dismissed by their employer, but they receive a temporary compensation. With respect to employers, employers tend to save on labor costs because it relieves them to bear all the costs while retaining their experience (Blanpain, 2012). We predict a negative relationship between blue-collar employment and employee layoffs[15].

We also include labor productivity, defined as the ratio of the added value to total average FTE employment. We expect a negative relationship between labor productivity and employee layoffs because firms typically find it unprofitable to retain low-productive workers, and hence attempt to permanently dismiss them (Gibbons and Katz, 1991).

We include two proxies for firm reputation, namely firm size, defined as the natural log of book assets, and firm age, defined as the natural log of firm age in years. Larger (more mature) firms have stronger reputations than smaller (younger) firms, and as a result each individual publicized employee layoff event provides less insight into the abilities of a larger (more mature) firm and its impact less their reputation (Flanagan and Shaughnessy, 2005). We predict a positive relationship between our proxies of firm reputation and employee layoffs.

We also include the Z"-score (Altman, 1993), measured as 3.26 * (retained earnings /book assets) + 6.72 * (EBIT/book assets) + 6.56 * (working capital/ book assets) + 1.05 * (capital/debt), as the proxy for financial distress. We expect a positive relationship between financial distress and employee layoffs. Employee layoffs often result from restructuring arising from financial distress. Firms view employee layoffs as a way for a financially troubled firm to survive (Worrel, Davidson II and Sharma, 1991).

Further, we include a profitability measure, defined as earnings before interests, taxes, depreciations, and amortization (EBITDA), which is scaled by book assets. The effect of profitability on employee layoffs is unclear. On the one hand, firms may choose to undertake

[15] Unfortunately, the dataset does not allow us to distinguish between temporary or permanent blue-collar worker dismissals.

value-enhancing measures (such as value-enhancing asset sales, employee layoffs, or replacing incumbent management) to improve the operating performance of the firm when the firm is more investor friendly (Atanassov and Han Kim, 2009). Moreover, employee layoffs are often a major change to firm cost structures. Managers view future costs as being more predictable than future revenues, and therefore, cutting employment costs is an easy way to boost profitability for less profitable firms (Hillier, Marshall, McColgan, and Werema, 2007).

We also include a proxy for the degree of illiquidity in the firm's assets. This proxy is the physical capital intensity, defined as the ratio of gross property, plant, and equipment to book assets. We expect a positive association between psychical capital intensity and employee layoffs because firms that are more physical capital-intensive prefer faster and larger employee layoffs when compared to less physical capital-intensive firms. The cost of a misallocation of employees is much higher for the more capital-intensive firms, or, the specific human capital is lower given the higher capital intensity (Qian, 2003; McKinney and Vilhuber, 2006).

We also control for whether a firm is a public firm by including a publicly quoted firm dummy equal to one for firms quoted on the Belgian stock exchange, and equal to zero otherwise. We predict that private firms will lay off more workers relative to public firms because the agency problems between shareholders and managers of private firms tend to be relatively less severe. Private firms relative to public firms often have a less dispersed ownership structure with each shareholder enjoy significant control over the firm (Brav, 2009).

3. Empirical Results

In this section, we first discuss the empirical results of the impact on trade credit on the likelihood of employee layoffs and early retirements. Next, we explore the empirical results of the joint impact of trade credit and works councils on the likelihood of employee layoffs and early retirements, by (1) discussing the differences in the characteristics of firms with and without a works council; (2) discussing the results of the pooled logistic regression of employee layoffs and early retirements in the whole sample; and (3) performing additional tests to explore the heterogeneity in the relationship between works council, trade credit, and the likelihood of employee layoffs and early retirements.

3.1. Do trade creditors increase employee layoffs?

3.1.1. Sample summary statistics

The sample average (median) trade debt over the period from 2004 to 2010 is 0.30 (0.25). The average (median) proportion of employee layoffs is 0.07 (0.00). The average (median) proportion of early retirements is 0.01 (0.00). The sample summary statistics for the full sample of firms can be found in Table 1.

An average (median) sample firm employs 20 (4) full-time equivalent employees. 4% of the workforce of an average sample firm are blue-collar workers. 2 % of the firms have a Works Council. The mean (median) labor productivity is 73,215.21 EUR (56,247.09 EUR). The average age of the firm is 14 years, and is ranging between 3 and 67 years. The firms are not quite large in terms of firm size, which ranges from 244.69 euros to 855,978 euros.[16] The lion's share of firms in our sample are financially strong and very profitable.

[INSERT TABLE 1 HERE]

3.1.2. Regression results

In Table 2, we report the average cross partial effects from the pooled logistic regression model with employee layoffs (early retirements) as dependent variable in model 1 (2). According to the trade debt moral hazard hypothesis (Hypothesis 1), we expect a positive relationship between the trade debt and the likelihood of employee layoffs. Our regression results support this hypothesis by showing that trade debt's estimated marginal effect coefficient (0.541) is positive and highly significant in model 1. According to Hypothesis 2, I expect a positive relation between trade debt and the likelihood of employee early retirement. Again, the results of the average marginal effect of trade debt support this hypothesis by showing that trade debt's average cross partial effect estimated coefficient (0.058) is positive and highly significant in model 2.

[INSERT TABLE 2 HERE]

Most of the average cross partial effects of the remaining explanatory variables in model 1 display the expected signs based on previous studies. Specifically, the coefficients of the average cross partial effects of works council presence, average employee pay, firm age, firm size, labor productivity, and profitability are positive and statistically significant at 1%,

[16] However, before winsorizing the data at the 1st and 99th percentiles, we observe that the firms are quite large in terms of firm size. The firm size ranges from 0.75 euros to 4.31e+08 euros.

consistent with expectations and previous findings. The estimated coefficients of the average cross partial effects on financial distress, asset tangibility, share of permanent employees, share of blue-collar workers, and publicly traded dummies are negative and statistically significant at 1%, which is also consistent with expectations and previous findings. We further find that the estimated coefficients of the average cross partial effects of the remaining explanatory variables in model 2 with dependent variable more early retirements display the same sign and level of statistical significance as in model (1) with dependent variable employee layoffs, except for average employee layoffs and labor productivity.

3.2. Do trade creditors increase employee layoffs in firms with a works council?

3.2.1. Univariate Analysis

In Table 3, we present summary statistics for the variables used in our analysis of the likelihood of employee layoffs and more early retirements by works council.[17] Additionally, Table 3 also reports the number of observations, the mean of firm-level variables, and the p-values of a hypothesis test for the difference between the means (proportions) of continuous (dummy) variables for firms with and without a works council. These data reveal several noteworthy patterns that we will explore in the following sections

[INSERT TABLE 3 HERE]

First, firms with a works council have significantly more employee layoffs and early retirements than those without. The differences between the proportion for firms with and without a works council are not only statistically significant, but also economically significant. For example, firms with a works council relative to without a works council tend to have 0.79 more only employee layoffs and 0.23 more early retirement layoffs. These results may counter the widely held view that stronger unions increase job security by making layoffs costlier (Chen, Kacperczyk, and Ortiz-Molina, 2011).

Second, firms with a works council have 8 percent more leverage than firms without a works council. This result is counter-intuitive. The general intuition is that firms are more leveraged in the presence of stronger unions for at least two reasons. First, stronger unions should reduce agency conflicts with creditors and thereby lead to better financing conditions (Lin, Schmid, and Xuan, 2016). Second, firms tend to be more leveraged because employees in

[17] Descriptive statistics for the whole sample are in Table 1.

these firms are less able to extract rents without increasing employment risk (Bronars and Deere, 1991; Hill and Jones, 1992; Dasgupta and Sengupta, 1993; and Perotti and Spier, 1993). Moreover, the average firm with a works council has 34% of its total debt in trade debt, while the average firm without a works council has 30% of its total debt in trade debt.

Third, it is worth noting that the workforce of the average firm with a works council is (not surprisingly) significantly larger than the average firm without a works council, since one of the requirement to install a works council is the size of the employment. Furthermore, the workforce of the average firm with a works council consists of fewer blue-collar workers and more productive and higher paid employees. Furthermore, it is clear that firms with a works council are significantly larger in terms of book assets, are more mature, have lesser physical capital intensity, are more financially sound, and are more listed on the stock exchange.

From the evidence in Table 3, we can conclude that firms with a works council have a higher employment risk (i.e. more employee layoffs and more early retirements) than those without. These firms also have more trade debt. Given this potentially counter-intuitive information, it is important to investigate the role of works council and trade credit on the likelihood of employee layoffs or more early retirements under *ceteris paribus* conditions in the following subsections.

3.2.2. Regression Analysis

In this subsection, we investigate whether works councils and trade debt have a joint significant association with the likelihood of employee layoffs and more early retirement. The results of the cross partial derivative of the unconditional probability of employee layoffs (more early retirements) with respect to either trade debt or works council are reported in model 1 (2) of Table 4.

[INSERT TABLE 4 HERE]

According to Hypothesis 3, works councils are expected to increase the positive effect of the share of trade debt on the likelihood of employee layoffs. Our regression results support this hypothesis by showing that the average cross partial derivative of firms with a works council is significantly higher than for firms without a works council. The coefficient of the average cross partial derivative of employee layoffs with respect to works council is 0.116 and statistically significant at 1%. This finding suggests that trade creditors tend to protect the value of their claims by pressuring the managers of firms with a works council to lay off employees. Managers are not legally required to ask administrative permission from the members of the

works council for these type of employee layoffs, and management does not have to disclose the reason of dismissal to the members of the works council under the study period, except for blue-collar workers.[18] Moreover, management must only report each dismissal to the works council to allow the works council to evaluate whether management has followed the pecking order for dismissal (Blanpain, 2012; Jevtic, 2012). This result may imply that trade creditors have some degree of market power on the buying-firm because the likelihood of only employees increases when the share of trade debt in total firm debt increases for firms with a works council.

We now turn our attention to the interpretation of the result of the change in the discrete cross partial effects of works council on more elderly employees. According to Hypothesis 4, we expect that the presence of works councils increase the positive relationship between trade debt and early retirements. The results support our Hypothesis 4, with a positive (0.035) and highly statistically significant coefficient on works council. This result implies that trade creditors can pressure buying-firms with a works council to protect the value of their claims by increasing more layoffs of elderly employees (early retirement layoffs) when firms with a works council have more outstanding trade debt.

3.2.3. Exploring the heterogeneity in the relationship between works council and trade debt: Subsample analysis

In this subsection, we present the results of the subsample investigation of the strength of the relationship between works councils and trade debt in the likelihood of employee layoffs and more early retirements. We first investigate the strength of this relationship by analyzing the political and socio-economic determinants of the employee leadership coalition within the works council. Next and finally, we investigate whether employees are better off in firms that did not elect a works council representation when trade creditors want to protect the value of their claims by increasing employment risk. As mentioned, firms can refuse to install a works council either when unions do not submit a list of candidates for the works council representation (Blanpain, 2012).

[18] Due to data limitation, we are unable to control for the effect of dismissed blue-collar workers demanding an extensive reasoning for their dismissal on the interaction effect between works council and trade credit on the likelihood of employee layoffs or asset fire sales, or a combination of both. Additionally, we are also unable to distinguish between workers dismissed for gross misconduct, or dismissals of protected employees.

3.3.1.1 The political and socio-economic determinants of the employee leadership coalition

The sole purpose of the elected employee leadership coalition is to use their power to improve the utility of their employees, principally by pushing the employees' wages above the market wage and by guaranteeing long-term employment at the firm, preferably achieved through collaboration with the employer representatives within the works council framework (Booth, 1995; Bennett and Kaufman, 2008; Blanpain, 2012). In this subsection, we investigate whether trade creditors can protect the value of their claims by increasing employment risk when accounted for the effectiveness of the employee leadership coalition within the works council and the factors influencing the effectiveness of employee leadership coalition. We do this by identifying the political and socio-economic determinants of the employee leadership coalition within the works council.

A. The political determinants of the employee leadership coalition within the works council

We only focus on one group of political determinants, namely the different possible fragmentations within the employee leadership coalition. We study *five* different type of fragmentations within the employee leadership coalition, namely the number of parties represented in the employee leadership coalition, the number of seats held by the different parties in employee leadership coalition, the political ideological party dispersion within the employee leadership coalition, employee leadership coalition specialization and the importance of the socialist labor union in the employee leadership coalition.

The *first* characteristic is the number of parties represented in the employee leadership coalition. The employee leadership coalition consists of employee representatives from different parties. This characteristic focuses on possible disagreement among various employee representatives from different parties within the employee leadership coalition. The employee leadership coalition is often formed by employee representatives from parties with different political or ideological orientations. The employee representatives can either come from the traditional, representative trade unions, or the representative trade unions of cadres or a party of independent candidates.[19] The representative Belgian trade unions are rooted in either in

[19] Belgian labor law does not provide guidance in how to define a cadre. However, cadres are often important white-collar workers with extensive job experience. The employer is only allowed to nominate cadres. However, traditional unions can introduce an action against the employer's decision on the cadres before the Labor Court. The Belgian labor law introduced

Christianity (ACV-CSC), socialism (ABVV-FGTB), or liberalism (ACLVB-CGSLB). The union with a more Christian ideology tends to prioritize cooperation between other unions and a search for compromise, but are not ruling out confrontation with the employer if necessary (Jouan and Tilly, 2017). High levels of militancy are associated with socialist trade unions (Martens and Pulignano, 2008).

Each representative trade union can defend autonomously the interests of their members in the employee leadership coalition. Thus, the more representatives from unions with different ideologies involved in the employee leadership coalition, the more likely conflicts of interest are to occur and the lesser the interests of employees are protected in case of conflicts at work. Moreover, trade unions may become more divided over how to protect the interests of their members in the best way because they may find it more difficult to pursue their own preferred policy within the employee leadership coalition. It is also possible that different parties of the employee leadership coalition may first meet to form a joint front to the employer representation within the works council. This can be done by formulating a joint program to protect the interest of the employees in the employee leadership coalition at the bargaining table within the works council (Blanpain, 2012). Moreover, it may also cause inter trade union conflicts, as the workers have unrestricted freedom to join a representative Belgian trade union. We expect that trade creditors are more able to protect the value of their claims when only one party forms the employee leadership coalition. However, we may also expect that trade creditors are less able to protect the value of their claims when more than one party forms the employee leadership coalition. This is the case when different parties agree on a common agenda to protect the interest of their members. The employee leadership coalition in this case is in a much stronger bargaining position because they are unified and speak with one voice to the employer representation within the works council. Moreover, in the event that the employer's representatives are unwilling to listen to the demands of the unified employee leadership coalition at the bargaining table, they can threat to go on strike. The average number of different employee representative parties in the employee leadership coalition in the Works Council ranges from 3 to 5 in Table 5. An important weakness of the number of employee representative parties is that it does not count for the stability of the employee leadership coalition.

The *second* characteristic is the stability of the employee leadership coalition which depends among other things on the share of seats held by the coalition parties, and the political

---

the concept of cadres to prevent that only traditional labor unions can only nominate candidates for the election of the employee leadership within the works council (Blanpain, 2012).

ideological dispersion of employee representation partners within the coalition (Figueiredo, Lopes Salles, and Vieira, 2009). It is generally assumed that coalition conflict can be caused by an exhaustion of the common agenda of the employee leadership coalition parties, external shocks (for example a sudden increase in unemployment), or a change of the policy of one or more parties in the employee leadership coalition (Müller and Miller, 2005). More (ideological) party seat dispersion in the employee coalition decreases the stability of the employee leadership coalition because more parties in the employee leadership coalition will try to place weight on employment issues and hence it can make the employee leadership coalition weaker. Another possible cause of the possible instability of the employee leadership coalition is the risk of possible dismissal for current employee representatives by the employer increases in case the special protection of the employee's representatives against dismissal ends. This is the case when they are not re-elected again for a new term. The risk of not getting elected for a consecutive term increases when they are less able to realize or break their promises in the current term as an employee representative within the Works Council. It also increases in general when a party has a smaller share in the employee leadership coalition (Blanpain, 2012; Störmer, 2010). Furthermore, we expect creditors to be less capable of protecting the value of their claims by increasing employment risk when the employee leadership coalition has more (ideological) party seat dispersion. We define the political dispersion measure as the standard deviation of the share of the different parties of the employee leadership coalition within the works council.

[INSERT TABLE 5 HERE]

This dispersion indicator measures how much the share of each party is spread out from the mean share of the party within the employee leadership coalition within the works council by firm. A lower (higher) dispersion measure means that most of the party shares in the employee leadership coalition are very close (spread out) to the average party share in the employee leadership coalition within the Works Council by firm.

The average employee coalition dispersion measure is 0.30 in Table 5, which indicates that parties have a similar share in the employee leadership coalition. Additionally, we also use two alternative dispersion measures, namely the range of the different shares of party representatives within the employee leadership coalition and the degree of party specialization within the employee leadership coalition. The range is defined as the difference between the largest and the smallest share of the employee representative party in the employee leadership

coalition within the Works Council. The range of seats held by a party of employee representatives ranges between 19% and 100, with an average of 68% in Table 5.

We borrow the two-step methodology developed by Colla, Ippolito, and Li (2013) to measure the degree of party specialization within the employee leadership coalition across firms. We first calculate EHHI by taking the squares of the sum of the ratios of each party to the employee leadership coalition for each firm with a works council, i, and at time t. Other parties include the list of candidates consisting of only managers (in Dutch: *Nationale Confederatie van het Kaderpersoneel* (NCK) and candidates from nonunion parties (see Blanpain, 2012):

$$\mathrm{EHHI}_{i,t} = \left(\frac{\mathrm{ACV-CSC}_{i,t}}{Employee\ leadershi\ \ coalition_{i,t}}\right)^2 + \left(\frac{\mathrm{ABVV-FGTB}_{i,t}}{Employee\ leadershi\ \ coalition_{i,t}}\right)^2 + \left(\frac{\mathrm{ACLVB-CGSLB}_{i,t}}{Employee\ leadership\ coalition_{i,t}}\right)^2 + \left(\frac{Other\ parties_{i,t}}{Employee\ leadership\ coalition_{i,t}}\right)^2 \quad (1)$$

We next calculate the normalized Herfindahl-Hirschman Index (HHI) of employee leadership as follows:

$$\mathrm{HHI_{i,t}} = \frac{\mathrm{EHHI_{i,t}} - \frac{1}{4}}{1 - \frac{1}{4}} \quad (2)$$

Higher values of $\mathrm{HHI_{i,t}}$ indicate that the employee leadership coalition is formed out of smaller number of parties. The degree of party specialization within the employee leadership coalition ranges between 0.05 and 1, with an average of 0.46 in Table 5.

We also test whether the trade creditors find it more difficult to protect their claims in the firms by increasing employment risk when more socialist union members form the employee leadership coalition. Socialist union members are traditionally associated with a higher level of militancy, such as frequently voting to go on strike and organizing work stoppages (Martens and Pulignano, 2008). The labor economics literature documents that unions with a higher level of militancy claim to deliver relatively more advantages for their members by setting ambition demands with few concessions. These unions are relatively more concerned about the day-to-day issues, as well as in the wellbeing of their members. However, militant unions with relatively more bargaining power are more willing to collude with management to solve jointly operational problems and to define jointly the long-term direction of the firm (Bacon and Blyton, 2002). The share of the socialist labor union in the employee leadership coalition ranges between 0 and 1, with an average of 0.20 in Table 5.

B. The socio-economic determinants of the employee leadership coalition within the works council

We select three socio-economic background determinants of the employee leadership coalition. These determinants are (1) the gender of the members of the employee leadership coalition, (2) the occupational status of the members of the employee leadership coalition, and (3) the age of the members of the employee leadership coalition.

B1. Gender and education level of the members of the employee leadership coalition

The first socio-economic background determinant is the gender of the members of the employee leadership coalition within the Works Council. Störmer (2010) investigates the individual characteristics of German Work Council Members and provides empirical evidence that female representatives, relative to male employee representatives in the German Works Council, tend to strongly defend the interests of the employees. They do this by taking a more active role in influencing and speaking up during negotiations of important employment issues within the company[20]. It is necessary for these female members of the German works council to be able to take initiative and be action oriented within the German Works Council. This tends to be necessary to them to ensure continued support from their employees. It is likely to assume that the effect will be stronger when female representatives in the employee leadership coalition are more educated. Due to data limitation, we define in this study a female representative of the employee leadership coalition as educated when they are employed as an office worker. We may expect that trade creditors are less likely to be able to protect the value of their claims by increasing employment risk when the employee leadership coalition consisting of more educated female members.

We use four indicators to investigate the effect of educated female membership to the employee leadership coalition on the relationship between trade creditors and employment risk. The first indicator is share of female educated representatives within employee leadership

[20] German Works Councils can be set up every four years when the firm employs at least five permanent employees. By contrast to the Belgian Works Councils, the German Works Councils only consist of employee representation. All the employees are covered under this Works Council, except for senior management. The chair of the German Works Council is an employee, while the chair for the Belgian Works Council is a representative of the employer and the secretary is an employee representative from the employee leadership coalition (Fulton, 2015; Blanpain, 2012). The German Works Councilors are also protected against dismissal during their term. Contrary to the Belgian Works Council, the German employer must discuss and provide reasons for any individual dismissal to the Works Councils. Otherwise, the dismissal is legally invalid (Grund and Schmittt, 2016).

coalition, defined as the ratio of female educated members to total members within the employee leadership coalition. On average, the female representatives are less educated. The average of female educated representatives is 0.14 in Table 5.

The second indicator is the average share of female educated representatives within the employee leadership coalition by party within the works council, defined as the average ratio of female educated members to total members by party within the employee leadership coalition. We observe that the average female educated representatives within the employee leadership coalition is low, namely 0.03 in Table 5.

The third indictor is the dispersion of the shares of female educated representatives within the employee leadership coalition by party. This is represented by the standard deviation of the shares of female educated members by party of the employee leadership coalition. This dispersion indicator measures how much the share of female educated representatives by party are spread out from the mean party share of female educated representatives within the employee leadership coalition. A lower (higher) dispersion measure means that most of the party shares of female educated representatives are very close (spread out) to the average share of female educated representatives within the employee coalition. The dispersion of the shares of female educated representatives within the employee leadership coalition by party ranges between 0.00 and 0.32 with an average of 0.05 in Table 5.

The fourth indicator is the range of the shares of female educated representatives within the employee leadership coalition by party, or the difference between the maximum and minimum share of female educated members by party of the employee leadership coalition. The range of the shares of female educated representatives within the employee leadership coalition by party ranges between 0.00 and 1.00 with an average of 0.37 in Table 5.

B2. The occupational status of the members of the employee leadership coalition

The next socio-economic background determinant is the occupational status (labor (blue-collar) workers vs. white-collar worker) of the employee leadership coalition. It is a generally accepted view that blue-collar workers are relatively more likely to demand a stronger form of collective voice within the employee leadership coalition because they face relative higher job insecurity (Addison, Schnabel, and Wagner, 1997). Blue-collar workers can be easily replaced or dismissed relative to white-collar workers. Additionally, Grund and Schmitt (2016) argue that we can apply Byrne's (1971) similarity-attraction theory to works councils. The employee leadership coalition tends to defend, represent, and protect more strongly the

employment rights of homogenous group of workers (in terms of job conditions and workload) such as blue-collar workers because they are much easier to represent and their interests are easier to defend to the employer at the bargaining table. We expect that the trade creditor is less likely to protect the value of their claims by increasing employment risk when the employee leadership coalition consists of more blue-collar workers.

We use four indicators to investigate the effect of blue-collar worker membership to the employee leadership coalition on the relationship between trade creditors and employment risk. The first indicator is share of blue-collar worker representatives within employee leadership coalition, defined as the ratio of blue-collar worker members to total members within the employee leadership coalition. The average of blue-collar worker representatives is 0.38 in Table 5.

The second indicator is the average share of blue-collar worker representatives within the employee leadership coalition by party within the works council, defined as the average ratio of blue-collar worker members to total members by party within the employee leadership coalition. We observe that the average blue-collar worker representatives within the employee leadership coalition is low, namely 0.13 in Table 5.

The third indictor is the dispersion of the shares of blue-collar worker representatives within the employee leadership coalition by party. It is the standard deviation of the shares of blue-collar worker members by party of the employee leadership coalition. This dispersion indicator measures how much the share of blue-collar worker representatives by party are spread out from the mean party share of blue-collar worker representatives within the employee leadership coalition. A lower (higher) dispersion measure means that most of the party shares of blue-collar worker representatives are very close (spread out) to the average share of blue-collar worker representatives within the employee coalition. The dispersion of the shares of blue-collar worker representatives within the employee leadership coalition by party ranges between 0.00 and 0.58 with an average of 0.15 in Table 5.

The fourth indicator is the range of the shares of blue-collar worker representatives within the employee leadership coalition by party. It is the difference between the maximum and minimum share of blue-collar worker members by party of the employee leadership coalition. The range of the shares of blue-collar worker representatives within the employee leadership coalition by party ranges between 0.00 and 0.71 with an average of 0.10 in Table 5.

B3. The age of the members of the employee leadership coalition

The third and final socio-economic background determinant is the age of the employee representatives in the employee leadership coalition. The longer the employee representative's tenure in the firm, the more likely it is that they have mastered the skills to protect the interests of the employees while participating in the Works Council (Frege, 1999). In this regard, a young worker is defined as a worker who is less than 25 year of age. A special regulation is put in place to prevent possible discrimination of employees based on age (Blanpain, 2012). We expect that trade creditors will be more able to protect the value of their claims by increasing employment risk when the employee leadership coalition consists more of younger workers.

We use four indicators to investigate the effect of young worker membership to the employee leadership coalition on the relationship between trade creditors and employment risk. The first indicator is share of young worker representatives within employee leadership coalition, defined as the ratio of young worker members to total members within the employee leadership coalition. The average of young worker representatives is 0.38 in Table 5.

The second indicator is the average share of young worker representatives within the employee leadership coalition by party within the works council, defined as the average ratio of young worker members to total members by party within the employee leadership coalition. We observe that the average young worker representatives within the employee leadership coalition is low, namely 0.09 in Table 5.

The third indictor is the dispersion of the shares of young worker representatives within the employee leadership coalition by party. It is the standard deviation of the shares of young worker members by party of the employee leadership coalition. This dispersion indicator measures how much the share of young worker representatives by party are spread out from the mean party share of young worker representatives within the employee leadership coalition. A lower (higher) dispersion measure means that most of the party shares of young worker representatives are very close (spread out) to the average share of young worker representatives within the employee coalition. The dispersion of the shares of young worker representatives within the employee leadership coalition by party ranges between 0.00 and 0.58 with an average of 0.11 in Table 5.

The fourth indicator is the range of the shares of young worker representatives within the employee leadership coalition by party. It is the difference between the maximum and minimum share of young worker members by party of the employee leadership coalition. The

range of the shares of young worker representatives within the employee leadership coalition by party ranges between 0.00 and 1.00 with an average of 0.20 in Table 5.

C. Empirical results

We report the results of the average marginal effects of both trade debt and the political determinants of the employee leadership in Table 6. We first turn our attention to the interpretation of the interaction results between trade debt and the number of parties represented in the employee leadership coalition within the works council on the likelihood of employee layoffs (model 1) and more early employee layoffs (model 2). We find that the coefficient of the average cross partial effect of the number of parties represented in the employee leadership coalition within the works council on the conditional probability of employee layoffs is -0.029 (-0.070) and statistically significant at 1% in model 1 (2). It seems that an employee leadership coalition consisting of more parties are more concerned in preventing unnecessary employee layoffs. The coefficient of the average marginal effect of trade debt is positive in both models, but only statistically significant in model 1 with dependent variable employee layoffs.

We now turn our attention to the interpretation of the interaction results between trade debt and the stability of the employee leadership coalition within the works council on the likelihood of employee layoffs and more early retirements. We measure the stability of the employee leadership coalition within the works council in three different ways, namely by the political dispersion measure, political range, and the degree of party specialization. The discussion of the results will follow that order. With respect to the political dispersion measure, we find that the coefficient of the average cross partial effect of the political dispersion measure on the conditional probability of employee layoffs is -0.205 and highly statistically significant. The total interaction effect (i.e. sum of the average cross partial of trade debt and the political dispersion measure) is negative. In other words, trade creditors cannot pressure management to protect the value of their claims by increasing employee layoffs when there is a large degree of heterogeneity in the shares of the employee representative parties in the employee leadership coalition within the works council. With respect to early retirements, we find that the coefficient of the average cross partial effect of political dispersion on the conditional probability of more early retirements is -0.558 and highly statistically significant.

With respect to the political range of the employee leadership, we find that the total average cross partial effect (i.e. the difference between average cross partial effect of trade debt and the political range of the employee leadership) on the conditional probability of employee

layoffs is positive (i.e. 0.019). Again, we only find that the average cross partial effect of the political range of the employee leadership coalition on the conditional probability of more early retirements is -0.236 and highly statistically significant in model 2 with dependent variable more early retirements.

With respect to the employee leadership specialization, we find the difference between the average cross partial effect of trade debt and the employee leadership coalition on the conditional probability of employee layoffs is 0.045. We speculate on possible explanations for these findings. Trade creditors benefit of the imbalances of the employee representative parties within the employee leadership coalition to protect the value of their claims by increasing employee layoffs. One possible explanation is that employee representation parties with a larger share are more likely to be reelected as a member of the employee leadership coalition because they face less competition of parties with a smaller representation in the coalition. Smaller parties are less able to raise their voice or levy concerns that larger parties have less incentives to protect the interest of the employees by preventing unnecessary dismissals. Again, we only observe that the average cross partial effect of employee leadership specialization on the conditional probability of more early retirements is -0.171 and highly statistically significant.

[INSERT TABLE 6 HERE]

Finally, we discuss the results of the average cross partial effect of trade debt and the presence of socialist unions on the likelihood of employee layoffs or more early dismissals. The coefficients of both the average cross partial effect of trade debt and share of employee leadership coalition from the socialist labor union on the conditional probability of employee layoffs is positive but statistically insignificant. This result is inconsistent with the existing literature that socialist union members are more able to protect the interests of their members by protecting employment and setting ambitious demands with few concessions.

Next, we discuss the results of the average cross partial effect of both trade debt and each socio-economic determinant on the conditional probability of either employee layoffs or more early retirements. The results for the socio-economic determinant gender (more educated female employee representatives), occupational status (blue-collar workers), and age of employee representatives are shown in Tables 7, 8, and 9. With respect to both female educated employee and blue-collar worker representation, we only find that the average marginal effect of trade debt on the conditional probability of employee layoffs is positive and highly significant. With respect to young worker representation, the average cross partial effect of the

dispersion of younger employee representation on the conditional probability of employee layoffs is -0.081 and highly statistically significant. This result suggests that when the employee leadership coalition consists more of younger workers from different unions, they are more likely to prevent unnecessary employee layoffs. The average disciplinary effect of trade debt on the conditional probability of employee layoffs is 0.106, but decreases to 0.025 when considered the average cross partial effect of young worker dispersion. Similar observation can be made for the range of the younger employee representation. The average disciplinary effect of trade debt on the conditional probability of employee layoffs is 0.106, but decreases to 0.062 when considered the average cross partial effect of the range of the younger employee representation. With respect to the unconditional probability of more early retirements, we find that younger workers in the employee leadership coalition prefer more early retirement. The average cross partial effect of younger workers on the unconditional probability of more early retirements is positive and highly significant, irrespective to the measurement of the representation of younger workers in the employee leadership coalition. A possible explanation is that management is obliged to hire a younger replacement for each elderly worker sent into early retirement. Elderly workers earn higher seniority wages relative to younger workers.

[INSERT TABLE 7 HERE]

[INSERT TABLE 8 HERE]

[INSERT TABLE 9 HERE]

3.3.1.2 Are employees better off in firms that elected a works council?

As mentioned in the literature review section, firms eligible to organize a works council election can refuse to install a works council if the trade unions did not submit a list of candidates for the election of the employee leadership coalition within the works council (Blanpain, 2012). We investigate whether trade creditors tend to treat firms that refused to install a works council differently than firms that installed a works council. We use the works council database from the Belgian Federal Public Service Employment, Labor, and Social Dialogue to manual identify firms that were eligible to organize a works council election but did not. Interestingly, 91 sample firms eligible to install a works council did not install a works council representation, while 2757 sample firms eligible to organize works council representation elections did install a works council representation.

Table 10 presents the means for firms with a works council and firms eligible to install a works council but did not install a works council. Additionally, the final column of Table 10

reports the p-values of a hypothesis test for the difference between the means (proportions) of continuous (dummy) variables for firms with a works council and eligible firms to install a works council but did not install a works council. Table 10 reveals that employees in firms with a works council appear to be worse off compared to employees in firms eligible to install a works council but did not install a works council in terms of employment security. In particular, on average, firms with a works council tend to have significantly higher proportion of both employee layoffs and early retirements. We observe suppliers do no treat buying-firms with and without a works council significantly differently. Furthermore, firms with a works council are significantly less leveraged, larger in size in terms of book assets, more mature, and have a higher physical capital intensity.

[INSERT TABLE 10 HERE]

[INSERT TABLE 11 HERE]

Table 11 presents the results of the cross partial derivative of the unconditional probability of employee layoffs (more early retirements) with respect to either trade debt or works council for a sample consisting of firms that refused to install a works council or have installed a works council in model 1 (2). I find that, on average, trade creditors can relatively pressure more firms with a works council to protect the value of their claims by increasing the conditional probability of employee layoffs. The sum of the average cross partial effect of trade debt (0.100) and works council (0.071) is 0.171. Employees in firms that refused to install a works council are significantly better off than employees in firms with a works council. Additionally, we only find that the coefficient of the average cross partial derivative of works council on the conditional probability of more early retirements is 0.175 and highly statistically significant.

4. Robustness

In this section, we discuss several additional robustness tests. We only report the results of the possible endogeneity issue. All the remaining results are available upon request, but have not been reported here in order to save on space.

A. Financial distress

The empirical literature documents that the frequency of asset downsizing and total wage bill reductions by employee layoffs increases with the likelihood of financial distress (see Worrel, Davidson II and Sharma, 1991; Pulvino, 1998). Trade creditors can also influence the restructuring outcome of the financially distressed buying-firms. On the one hand, trade

creditors are willing to insure the buying-firm not only against liquidity shocks but also against risk of liquidation that could endanger their survival by providing or extending trade credit (Cuñat, 2007; Love, Preve and Sarria-Allende, 2007), or preferring a continuation over liquidation of the distressed firm when trade creditors are serving on Unsecured Creditor Committee in bankruptcy procedures such as Chapter 11, continuation outcomes are more likely (Waldock, 2017). On the other hand, suppliers can also force repayment of the credit by threatening to cut off future supplies in the case of the deterioration of the solvency of the buying-firm, or possibly seize and resale of the supplied goods (Petersen and Rajan, 1997). In the former (latter), we expect that trade creditors would pressure fewer (more) managers in more distressed firms to protect the value of their claims by increasing employee turnover. To check these possibilities, we extend our baseline pooled logistic regression model by including the interaction term trade debt x works council x financial distress.

We find that both trade credit and works councils remain significant deciding factors in determining the likelihood of employee layoffs or more early retirements. The positive marginal effect of trade debt confirms that, as the use of trade debt increases, trade creditors' incentives to protect the value of their claims by increasing employee layoffs or more early retirements also increase. In sum, the main results of the paper remain unaltered after the investigation of the importance of financial distress in the interaction effect of works council and trade debt on the likelihood of employment risk.

B. Introduction of the notional interest deduction

We also check whether the results are robust for the Allowance for Corporate Equity (ACE hereafter) (NID hereafter). The NID is a tax reform that was introduced in Belgium in 2006. The NID came into effect due to a ruling of the European Commission in 2003, which prohibited the existence of coordination centers in Belgium. There existed a tax discrimination from these coordination centers against other Belgian firms because taxes were calculated based on expenses less financial and salary costs instead of profits. An important feature from the NID is the Allowance for Corporate Equity (ACE hereafter). An ACE allows firms to deduct a notional interest rate on their equity. Since 2006, Belgian and foreign firms permanently established in Belgium can deduct a notional return of their book value of equity (Schepens, 2016). The introduction of NID could trigger firms to substitute debt by equity because it makes firms indifferent in their choice between debt and equity, at least in terms of corporate tax implications. However, Van Campenhout and Van Caneghem (2013) investigate the impact of the notional interest deduction on the capital structures of Belgian SMEs, and they find that the

NID did not result in a significant reduction of debt. To check the importance of the NID, we include the interaction term trade debt x works council x NID dummy in the baseline pooled logistic regression model. The NID dummy equals to one for years 2006 until 2010, and zero otherwise. We find that the main results are robust to the introduction of the NID.

C. Financial Crisis

A major financial crisis hit Belgium in 2008 and is still ongoing for the sample firms. Love, Preve, and Sarria-Allende (2007) provide evidence that firms temporarily stop paying back their trade credit after a crisis hits. They argue that suppliers can act by either taking write-downs on their outstanding claims on the buying-firms or wait until the buying-firms resume payment. Moreover, employers may resort to cutting more jobs or other restructuring measures during a financial crisis as it tends to decrease demand for their goods and services (Coile and Levine, 2011). We investigate the possibility whether or not trade creditors may put additional pressure on management to increase employment risk to protect the value of their claims in crisis period. Although we do control for the possible effects of a financial crisis by including year-fixed effects in the baseline pooled logistic regression, we decide to run two additional analyses. With respect to the first analysis, we extend our baseline pooled logistic regression model by including the interaction term trade debt x works council x financial crisis. The financial crisis is a dummy, equals to one for years 2008, 2009 and 2010, and zero otherwise. With respect to the second analysis, we split the sample into two subsamples. The first subsample covers the pre-financial crisis period from 2004 to 2007, while the second subsample covers the financial crisis period from 2008 to 2010. We only observe that the coefficient estimates of trade debt (works council) are relatively smaller (larger) in magnitude during the financial crisis period. The conclusions remain unchanged.

D. Performance declines

Denis and Kruse (2000) argue that shareholders tend to discipline managers by either reducing their control over the firm or dismissing them when they fail to respond to a decline in performance. The treat of control reduction or dismissal may provide meaningful incentives to managers to respond to a decline of the firm's operating performance by increasing corporate restructuring. The authors find that asset restructuring announcements are more likely when managers face disciplinary pressures to respond to performance declines. Furthermore, these firms experience improvements in operation performance after going through a restructuring of their assets. Moreover, managers in poorly performing firms may not only face pressure from the shareholders but also from their trade creditors. Trade creditors may find it more difficult

to protect the value of their claims in poorly performing firms, and hence they may pressure more the mangers to increase employment risk. We investigate this possibility by including the three-way-interaction term *profitability x trade credit x works council* in the baseline pooled logistic regression model. We find that the main results are robust to performance declines. Our main results are unaffected.

E. Firm financing constraints

Firms with financial constraints often tend to resort to cutting employment when they are unable to raise (additional) debt financing, and hence, increases the unemployment risk of their employees (Agrawal and Matsa, 2013). These firms are constrained to use more costly debt financing, but trade credit can ease the constraints. The empirical literature documents that trade credit can be used as a substitute for bank debt when the firms are more financially constrained (Petersen and Rajan, 1997; Atanasova, 2007; Molina and Preve, 2012). On the one hand, financially constrained firms may have more incentives to protect the value of their claims by increasing employment risk. This is because bank debt can be substituted by trade credit. On the other hand, the works councils may be more eager to protect employment when financially constrained firms are increasing employment risk. We investigate this possibility by including a three-way interaction term *financial constraint proxy x works council x trade debt* in the baseline logistic regression model. We use three commonly used proxies for firm financial constraints. These indicators are firm-size index, borrowed from Hadlock and Pierce (2010), firm size, firm age, and operating cash flow.

The first indicator, the size-age index from Hadlock and Pierce (2010), is measured as -0.737 x Size (natural logarithm of total assets) + 0.043 x Size^2 - 0.040 x Age (number of years that a firm exists). We take the natural logarithm of the size-age index. A higher (lower) size-age-index value is consistent with greater (smaller) financial constraints. As the Size-age index is calculated for US listed firms in Hadlock and Pierce (2010) but we use a sample of consisting of private firms, we also divide the sample based on firm size and age. It is reasonable to expect that smaller firms face more severe financial constraints since these firms do not have the reach or visibility that larger firms have. As a result, investors have difficulties in screening the quality of projects. Moreover, smaller firms tend to be more credit rationed (Gertler and Gilchrist, 1994; Petersen and Rajan, 1995; Hadlock and Pierce, 2010). Younger firms are expected to face more severe financial constraints. Large information asymmetries exist between investors and firms that are just been created. Firm's creditability with creditors, banks, and investors in general increases over time, which allows more mature firms to obtain external financing at a

lower cost (Carreira and Silva, 2013; Agrawal and Matsa, 2013). The final proxy for firm financial constraints is operating cash flow, defined as the ratio of EBITDA to book value of assets. The presence of information asymmetry increases the relative cost of external financing. The higher the degree of information asymmetry, the greater the external financial constraints and investment will rely more on internal operating cash flow (Wan and Zhu, 2011). The results remain unaltered.

F. Social election years

The works council is elected every four years by the whole workforce of the firm when the legal requirements to install a works council are met. Employees are more likely to join unions in firms with a higher threat of job loss. Moreover, these employees may demand a works council on defensive grounds. They may believe rightly that the unions in the works council may use their veto right to protect them from dismissal (Windolf and Haas, 1989; Addison, Bellman, Schnabel, and Wagner, 2002). The increase in union membership is likely to strengthen the bargaining power of unions on employment related issues and therefore the union's impact on defining the general criteria in the works council framework. Unions are more likely to mobilize more voters to demand a strong mandate for protecting employment during the works council election campaign. After the works council election, employees expect that elected union members in the employee leadership coalition within the works council to deliver on their promises within the first years of their administration. It is plausible to assume that managers would be less likely to dismiss workers when creditors pressure them to protect the value of their claims by increasing employee turnover in the pre, during, and post-election year.

We investigate this possibility by including the interaction term *trade debt x works council x pre-election x election x post-election* in the pooled logistic regression model. Pre-election dummy equals to one for year 2007, and zero otherwise. Election dummy equals to one for years 2004 and 2008, and zero otherwise. Post-election year dummy equals to one for years 2005 and 2009, and zero otherwise. Some interaction terms drop out due to the nature of election dummy variables. The conclusion of the main results does not change when controlled for the pre-, during and post-election of the works council representation.

G. Endogeneity concerns

We also address important endogeneity concerns such as omitted variables and reverse causality. We first address the reverse causality concern of the independent variables trade debt and works council. These variables are lagged one period because it allows the works council

receives economic, financial and employment information occasionally, periodically, and annually. However, a lagged variable can cause simultaneity bias (Reed, 2015). According to Parsons and Titman (2008), reverse causality may occur when (future) corporate leverage policy is mainly determined by the (undesired) effects and the characteristics of the workforce (such as wage costs, use of temporary workers, employee layoffs, etc.). Furthermore, employee layoffs can theoretically impact capital structure decisions also through firing costs of an employee in two different ways. First, higher dismissal costs could lead firms to lower their debt levels because reducing the wage bill by employee layoffs becomes more difficult. This may increase both the operating leverage of the firm and the bankruptcy risk of the firm (see Mandelker and Rhee, 1984; Mauer and Triantis, 1994; Kahl, Lunn, and Nilsson, 2014). Second, higher dismissal costs could lead firms to higher their leverage because the wage premium associated to an increase in leverage shrinks when it is more difficult to fire employees (Titman, 1984; Agrawal and Matsa, 2013).

We also investigate the endogenous relationship between works council and the likelihood of employee layoffs due to self-selection. Self-selection exists when employees can ask their unions to establish a works council (Jirjahn, 2009). Employees may be more willing to vote in favor of a works council representation when their firm pose a larger employment risk to them or firms in sectors traditionally known for laying off employees *en masse*.

We address this reverse causality by estimating instrumental variable probit regression with standard errors clustered at the firm level. We would be estimating linear probability models because the dependent variables of the different pooled logistic regression models are binary variables. The instrumental variable probit regression includes the instrumental variables, endogenous variables, works council and firm-control variables used in the baseline pooled logistic regression model. Due to convergence difficulties of the probit regression model, we re-define the labor productivity variable as the natural logarithm of the sum of labor productivity and one. We define negative values of labor productivity measures as zero. To increase the comparison of the results from the baseline logistic regression model with the results of the instrumental variable probit regression model, we will also re-estimate the baseline regression model by using a pooled probit regression model.

We must select valid instruments for the endogenous variables trade debt and works council. Finding valid instrument is always a matter of debate. A valid instrument should suffice two conditions, namely to be economically related to the endogenous variable and to be uncorrelated with the second stage of the instrumental regression error term (Fan, Titman and Twite, 2012). We use three instrumental variables, namely firm's exposure to the works council

law in Belgium, firm's exposure to the commercial law, and the average industry's exposure to the commercial law in Belgium.

Firm's exposure to the works council law is defined as the ratio of the firm age in years to the fraction of years since 1946 that Belgium has introduced the works council law[21]. Firm with more exposure the works council law may have more legal expertise to deal with works council related issues. Firm's exposure to the commercial law is defined as the ratio of the firm age in years to the fraction of years since the entry of the law in 1807. Firm with more exposure the commercial law may have more legal expertise to deal with trade related issues. Additionally, we also include the average industry exposure to the commercial law.

The second condition is the validity criteria. The instrument should be uncorrelated with the second stage instrumental variable probit regression error term (Fan, Titman and Twite, 2012). Unfortunately, no validity test for the instrumental variable probit regression model does exist. Moreover, the candidate instrumental variables are exogenously determined. We do not find any literature indicating that these instrumental variables directly affect the likelihood of employee layoff or more early retirements. Finally, there is no widely accepted goodness of fit measure for instrumental variable regression estimation techniques. As a result, we will report the p-value of the Wald chi2 statistics of the instrumental variable probit regression model in Table 12.

We observe that the main results of the paper are robust for endogeneity concerns of trade debt and works council. The average cross partial derivatives of trade debt and works council on the unconditional probability of both employee layoffs and more early retirements is positive and highly statistically significant.

[INSERT TABLE 12 HERE]

With respect to potential omitted variable bias, we cannot remove omitted variable bias and lower the concern of self-selection by including year and industry fixed effects in the baseline pooled logistic regression model due to the nonlinear nature of the regression model. To address potential omitted variable bias related to the workforce characteristics, we did include sufficient number of workforce control variables (such as labor productivity, permanent employment, blue-collar employment, and average employee pay) in the baseline pooled logistic regression model.

[21] A common used instrument for works council is the age of the firm. Older firms need less flexible institutions or can deal better with the persistence of bargaining structures (Addisson, 2009). However, this variable is not suited for our analysis because firm age is an important predictor of employee layoffs, asset fire sales, or a combination of both.

5. Conclusion

Using data from 2004 to 2010 for 146,215 Belgian firms (124 public firms and 146,091 privately owned firms), this paper examines empirically whether or not trade creditors can protect the value of their claims by increasing employment risk. We provide robust evidence that suppliers pressure the buying-firm to protect the value of their claims by increasing employee layoffs. We also investigate whether the type of employee layoffs matters. The evidence found by this paper suggests that suppliers pressure buying-firm to dismiss employees by higher seniority wages by using early retirement schemes. We extend our analysis by empirically investigating whether the Works Council – a government created institution to increase collaboration, mutual understanding, and information sharing between the employer and its employees at the firm level – can prevent that trade creditors pressure management to protect the value of their claims by increasing employee layoffs or send employees to early retirement. I provide robust evidence that works council cannot prevent that trade debt pressure management to increase employee layoffs and send higher wage employees to early retirement. The law authorizes works council to negotiate (favorable) severance packages with respect to the early retired employees. The early retired employee receives from the employer a monetary benefit until the employee reaches his official retirement age.

In this paper, we also address an important critique with implications for future research on works councils with codetermination rights. Due to the legal nature of the works council, are unable to form one group consisting of firms of similar size (i.e. firms with a works council vs. firms without a works council). One notable exception is when firms eligible to install a works council but did not install a works council because the unions did not submit a list of candidates for the election of the works council representation. This is more the exception than the rule.

This paper has two important limitations. The first limitation of the results and dataset might be that we cannot directly control for trade credit contract terms and the characteristics of the supplier. This would allow us to develop metrics for the market power of the suppliers. Unfortunately, this information is not publicly available. The second limitation is that throughout the paper, we make use of employee layoffs and type of employee layoffs as possible means for trade creditors to protect the value of their claims in the buying-firm. However, there are other ways to increase employment risk. For example, employers may increase employment risk by using more agency temporaries (Gill, 2015) and short-term (flexible) employment or reducing working hours (Hanka, 1998). However, trade creditors may

also sell off their claims when the probability of recovery of their claims in a future bankruptcy procedure is low (Ivashina and Iverson, 2014).

REFERENCES

Addison, John T, 2009. The economics of codetermination. Palgrave Macmillan, New York

Addison, John T, Bellman, Lutz, Schnabel, Claus and Joachim, Wagner, 2002, German works council old and new: Incidence, Coverage, and Determinants. *IZA Discussion Paper Series*.

Addison, John T, Teixeira, Paulino, and Thomas, Zwick, 2010. German works councils and the anatomy of wages, *International Labor Reviw 63*, 247-270

Agrawal, Ashwini K., and David, Matsa, 2013. Labor Unemployment Risk and Corporate Financing Decisions. *Journal of Financial Economics 108*, 449–470.

Altman, Edward I., 1993. Corporate financial distress and bankruptcy: A complete guide to predicting and avoiding distress and profiting from bankruptcy. New York: John Wiley and Sons.

Atanasova, Christina, 2007, Access to institutional finance and the use of trade credit. *Financial Management 36*, 49-67.

Atanassov, Julian, and E. Han, Kim, 2009. Labor and corporate governance: International evidence from restructuring decisions. *Journal of Finance 64*, 341-374.

Bacon, Nicolas, and Paul Blyton, 2002 Militant and moderate trade union orientations: what are the effects on workplace trade unionism, union-management relations, and employee gains?, *The International Journal of Human Resource Management 13*, 302-319.

Baker and McKenzie, 2009, Worldwide Guide to Trade Unions and Works Councils, Law Firms.

Biais, Bruno, and Christian, Gollier, 1997. Trade Credit and Credit Rationing, The Review of Financial Studies 10, 903-937.

Beck, Thorsten, De Jonghe, Olivier, and Glenn, Schepens, 2013. Bank competition and stability: Cross-country heterogeneity. *Journal of Financial Intermediation 22*, 218-244.

Bennett, James, T., and Kaufman, Bruce, E., 2008, What Do Unions Do? A Twenty-Year Perspective Transaction Publishers, New Brunswick.

Berk, Jonathan B., Stanton, Richard, and Josef, Zechner, 2010. Human capital, bankruptcy, and capital structure. *Journal of Finance 65*, 891-926.

Blanpain, Roger, 2012, Labour Law in Belgium 5th edition. *Kluwer Law International*, 440 pages.

Booth, Alison, L., 1995, The Economics of the Trade Union; Cambridge (Eng.): Cambridge. University Press.

Brav, Omer, 2009. Access to capital, capital structure, and the funding of the firm. *The Journal of Finance 64*, 263-308.

Bronars, Stephan G., and Donald D., Deere, 1991. The threat of unionization, the use of debt, and the preservation of shareholder wealth. *Quarterly Journal of Economics 106*, 231-254.

Butt-Jaggia, Priscilla, and Anjan V. Thakor, 1994, Firm-specific human capital and optimal capital structure, *International Economic Review 35*, 283–308.

Byrne, Donn Erwin, 1971. The attraction paradigm, New York, Academic Press.

Carreira, Carlos, and Silva, Filipe, 2013. Do size, age and dividend policy provide useful measure of financing constraints? New evidence from a panel of Portuguese firms. *Working paper Faculdade de Economia de Universidade de Coimbra*.

Chen, Huafeng (Jason), Kacperczyk, Marcin, and Hernan, Ortiz-Molina, 2011. Labor Unions, Operating Flexibility, and the Cost of Equity, *Journal of Financial and Quantitative Analysis 46*, 25-58.

Cockx, Bart, and Bruno, Van Der Linden, 2009. Flexicurity in Belgium: A Proposal Based on Economic Principles. *IZA Policy Paper No. 9*.

Coile, Courtney C., and Phillip B. Levine, 2011, The Market Crash and Mass Layoffs: How the Current Economic Crisis May Affect Retirement, *The B.E. Journal of Economic Analysis & Policy 11*, 1-40.

Colla, Paolo, Filippo, Ippolito, and Kai, Li, 2013, Debt specialization. *The Journal of Finance 68*, 2117-2141.

Cronqvist, Hendrik, Heyman, Frederik, Nilson, Mattias, Svaleryd, Helena, and Jonas, Vlachos. 2009. Do Entrenched Managers Pay Their Workers More? *The Journal of Finance 64*, 309-339.

Cuñat, Vicente, 2007, Trade Credit: Suppliers as Debt Collectors and Insurance Providers, *Review of Financial Studies 20*, 491-527.

Cuñat, Vicente, and Emilia Garcia-Appendini, 2012. Trade credit and its role in entrepreneurial finance in: Cumming, D. (Ed.), 2012, Oxford Handbook of Entrepreneurial Finance, Oxford University Press, New York, pp. 526-557.

Dasgupta, Sudipto, and Sengupta, Kunal, 1993. Sunk Investment, Bargaining and Choice of Capital Structure, *International Economic Review 34*, 203-220.

Denis, David J., and Timothy A., Kruse, 2000. Managerial discipline and corporate restructuring following performance declines. *Journal of Financial Economics 55*, 391.424.

Donaldson, Thomas and Lee E., Preston, 1995. The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *The Academy of Management Review 20*, 65-91.

Douglas, Davison M., 1982, Labor Unions in the Boardroom: An Antitrust Dilemma, *Faculty Publications. Paper 121*.

Falato, Antonio, and Nellie, Liang, 2016. Do Creditors Rights Increase Employment Risk? Evidence from Loan Covenants. *The Journal of Finance 71*, 2545-2590.

Fan, Joseph P.H., Titman, Sheridan, and Garry, Twite, 2012. An International Comparison of Capital Structure and Debt Maturity Choices. *Journal of Financial and Quantitative Analysis 47*, 23-56.

Figueiredo, Argelina, Cheibub, Denise Lopes Salles, and Marcelo Martin Vieira. 2009. Political and Institutional Determinant of the Executive's Legislative Success in Latin America, *Brazilian Political Science Review 3*, 155-171.

Flanagan, David J. and K.C. O'Shaughness, 2005, The Effect of Layoffs of Firm Reputation, *Journal of Management 31*, 445-463.

Frank, Murray Z. and Goyal, Vidhan K., 2007. Trade-Off and Pecking Order Theories of Debt *Unpublished working paper*.

Frege, Carola, M., 1999. Social Partnership at Work: Workplace relations in post-unification Germany. *Routledge studies in Employment Relations*.

Fulton, Lionel, 2015. Worker representation in Europe. Labour Research Department and ETUI. Produced with the assistance of the SEEurope Network.

Garcia-Teruel, Pedro and Pedro, Martinez-Solano, 2010. *Determinants of trade credit: A comparative study of European SMEs*. International Small Business Journal 28, 215-233.

Gertler, Mark, and Simon, Gilchrist, 1994. Monetary policy, business cycles, and the behavior of small manufacturing firms. *Quarterly Journal of Economics 109*, 309–340.

Gibbons, Robert, and Lawrence F., Katz, 1991. Layoffs and Lemons, *Journal of Labor Economics 9*, 351-380.

Gill, Balbinder Singh, 2015. Wages, unemployment costs and capital structure choices of unlisted firms, *Unpublished Working Paper*.

Grund, Christian, and Andreas, Schmitt, 2016. Works councils, quits and dismissals in Germany. *German Journal of Human Resource Management 30*, 53-75.

Hadlock, Charles J., and Joshua R, Pierce, 2010. New evidence on measuring financial constraints: moving beyond the KZ index. *Review of Financial Studies 23*, 1909–1940.

Hallock, Kevin, 1998, Layoffs, top executive pay, and firm performance, *American Economic Review* 88, 711–723.

Han Kim, E, Maug, Ernst, and Christoph, Schneider, 2017. Labor representation in governance as an insurance mechanism, *European Corporate Governance Institute Working Paper*.

Hanka, Gordan, 1998. Debt and the terms of employment. *Journal of Financial Economics 48*, 245-282.

Hill, Charles W.L., and Thomas M., Jones, 1992. Stakeholder-Agency Theory. *Journal of Management Studies 29*, 131-154.

Hillier, David, Marshal, Andrew, McColgan, Patrick, and Samuel, Werema, 2007. Employee Layoffs, Shareholder Wealth and Firm Performance: Evidence from the UK. *Journal of Business Finance and Accounting 34*, 467-494.

Ivashina, Victora, and Benjamin, Iverson, 2014, Trade Creditors' Behavior in Bankruptcy*, Unpublished working paper.*

Ivashina, Victoria, Iverson, Benjamin and David Smith, 2014, The Ownership and Trading of Debt Claims in Chapter 11 Restructurings, *Working paper*.

Jensen, Michael C. and Smith, Clifford W., Stockholder, Manager, and Creditor Interests: Applications of Agency Theory (July 1, 1985). Theory of the Firm (Book), Vol. 1, No. 1, 2000.

Jensen, Michael C., 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review 76*, 323-329.

Jensen, Michael C., and William H., Meckling, 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics 3*, 305-360.

Jevtic, Milan, 2012. The role of Works Councils and Trade Unions in representing interests of the employees in EU member states (partnership or competition), Friedrich-Ebert-Stiftung, Regional Project for Labour Relations and Social Dialogue in South East Europe, 75 pages.

Jirjahn, Uwe, 2009, The introduction of works councils in German establishments — rent seeking or rent protection. *British Journal of Industrial Relations 35*: 521–45.

Jirjahn, Uwe, and Steffen, Mueller, 2014. Non-union worker representation, foreign owners, and the performance of establishments. *Oxford Economic Papers*, 140-163.

John, Kose, Knyazeva, Anzhela, and Diana, Knyazeva, 2015. Employee rights and acquisitions, *Journal of Financial Economics* 118, 49-69.

Jouan, Quentin, and Pierre, Tilly, 2017, The Belgian trade union organizations: national divisions and common European action in National trade unions and the ETUC: A history of unity and diversity, ETUI, Brussels.

Jousten, Alain, and Ekaterina, Tarantchenko, 2014. Financial incentives to retirement in Belgium: what policy lessons? Unpublished working paper.

Kahl, Matthias, Lunn, Jason, and Mattias Nilsson, 2014, Operating leverage and corporate financial policies, *Working paper, University of Colorado*.

Karaca-Mandic, Pinar, Edward C, Norton and Bryan, Dowd, 2012. Interaction terms in nonlinear models, *Health Services Research 47*, 255–274.

Karakaya, G., 2008. Early cessation of activity in the labour market: impact of supply and demand factors, *Université Libre de Bruxelles N°09-04*.

Klapper, Leora, Laeven, Luc, and Raghuram, Rajan, 2012. Trade Credit Contracts. *The Review of Financial Studies 25*, 838-867.

Leys, Christophe., Ley, Christophe, Klein, Olivier, Bernard, Philippe, and Laurent, Licata, 2013. Detecting Outliers: Do not use standard deviations around the mean, use absolute deviations around the median. *Journal of Experimental Social Psychology 49*, 764–766.

Lin, Chen, Schmid, Thomas, and Xuan, Yuhai, 2016, Employee Representation and Financial Leverage, *Journal of Financial Economics (JFE)*, Forthcoming.

Love, Inessa, Preve, Lorenzo A., and Virginia Sarria-Allende, 2007. Trade credit and bank credit: Evidence from recent financial crises. *Journal of Financial Economics 83*, 453-459.

Mandelker, Gershon N., and S. Ghon Rhee, 1984, The impact of the degrees of operating and financial leverage on systematic risk of common stock, *Journal of Financial and Quantitative Analysis 19*, 45–57.

Martens, Albert, and Valeria, Pulignano, 2008, Renewed trade union militancy in Belgium: An analysis based on expenditure from the strike fund (CWK/ACV) during the period 1974-2004, *Economic and Industrial Democracy*, 437-466.

Mauer, David C., and Alexander J. Triantis, 1994, Interactions of corporate financing and investment decisions: A dynamic framework, *Journal of Finance 49*, 1253–1277.

McKinney, Kevin and Lars, Vilhuber, 2006. Using Linked employer-employee data to investigate the speed of adjustment in downsizing firms. *Longitudinal Employer – Household Dynamics Working Paper Series*.

Mitchell, Terence R., Holtom, Brooks C., and Thomas W, Lee, 2001. How to keep your best employees: Developing an effective retention policy, *Academy of Management Executive 15*, 96-109.

Molina, Carlos A., and Lorenzo A, Preve, 2012. An Empirical Analysis of the Effect of Financial Distress on Trade Credit. *Financial Management 41*, 187-205.

Müller C., Wolfgang, and Bernhard, Miller, 2005. Coalition government and intra-party politics. *Unpublished Working Paper University Manheim*.

Norton, Edward C., Wang, Hua, and Chunrong, Ai, 2004. Computing interaction effects and standard errors in logit and probit models. *The Stata Journal 4*, 154-167.

Pagano, Marco and Paolo F., Volpin, 2005. Managers, workers, and corporate control. *Journal of Finance 60*, 841-868.

Parsons, Christopher, and Sheridan Titman, 2009, Empirical Capital Structure: A Review, *Foundations and Trends in Finance 3*, 1-93.

Perotti, Enrico C., and Kathryn E, Spier, 1993. Capital structure as a bargaining tool: The role of leverage in contract renegotiation. *American Economic Review 83*, 1131-1141

Petersen, Mitchell A, and Raghuram, G. Rajan, 1997. Trade Credit: Theories and Evidence. *The Review of Financial Studies 10*, 661-691.

Petersen, Mitchell A., 1992. Pension Reversions and Worker-Stockholder Wealth Transfers. *The Quarterly Journal of Economics 107*, 1033-1056.

Petersen, Mitchell A., 2009. Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches. *The Review of Financial Studies 22*, 435-480.

Qian, Yiming, 2003. Human-capital-intensive firms: incentives and capital structure. *Working paper series NYU Stern School of Business*.

Rajan, Raghuram G., and Luigi, Zingales, 1995, What do we know about capital structure: Some evidence from international data. *Journal of Finance 50*, 1421–1460

Reed, William Robert, 2015. On the practice of lagging variables to avoid simultaneity. *Oxford Bulleting of Economic and Statistics 77*, 897-905.

Schepens, Glenn, 2016. Taxes and bank capital structure. *Journal of Financial Economics 120*, 585-600.

StataCorp. 2011. Stata: Release 12. Statistical Software. College Station, TX: StataCorp LP.

Stock, James, Wright, Jonathan H., Yogo, Motohiro, 2002. A survey of weak instruments and weak identification in generalized method of moments. *Journal of Business & Economics Statistics 20*, 518–529

Störmer, Susi. 2010, Individual Characteristics of Work Council Members – Empirical Evidence. *Management revue 21*, 244-262.

Titman, Sheridan, 1984, The effect of capital structure on a firm's liquidation decision, *Journal of Financial Economics 13*, 137–151

Van Campenhout, Geert, and Tom, Van Caneghem, 2013. How did the notional interest deduction affect Belgian SMEs' capital structure? *Small Business Economics 40*, 351-373.

Waldock, Katherine P., 2017. Unsecured creditor control in Chapter 11. *Unpublished Working Paper*.

Wan, Hualin, and Kai, Zhu, 2011. Is investment–cashflow sensitivity a good measure of financial constraints? *China Journal of Accounting Research 4*, 253–270.

Windolf, Paul, and Joachim, Haas, 1989, Who joins the union? Determinants of trade union membership in West Germany 1976-1984. *European Sociological Review 5*, 147-165.

Worrel, Dan L., Davidson II, Walace N, and Varinder M., Sharma, 1991, Layoff Announcement and Stockholder Wealth. *The Academy of Management Journal 34*, 662-678.

Table 1:
Summary Statistics

We report summary statistics for Belgian firms from 2004 to 2010 in Table 1. The total number of firms in the full sample is 642,045. Definitions of the variables are in Section 2 of this paper.

	Nobs	Mean	Std. Dev.	Min	Median	Max
Employee layoff	642,045	0.07	0.26	0.00	0.00	1.00
More early retirements	642,045	0.01	0.08	0.00	0.00	1.00
Leverage	642,045	0.70	0.40	0.04	0.69	1.00
Trade debt	642,045	0.30	0.30	0.00	0.25	0.93
Dummy Work Council	642,045	0.02	0.02	0.00	0.00	1.00
Share of permanent workers	642,045	0.94	0.94	0.00	1.00	1.00
Average employee pay	642,045	10.46	10.46	8.98	10.49	11.63
Firm age	642,045	2.64	2.64	1.10	2.77	4.20
Firm size	642,045	8.71	8.71	5.49	8.56	13.66
Labor productivity	642,045	73215.21	73215.21	-10306.00	56247.09	423030
Financial distress	642,045	2.61	2.61	-15.11	1.97	28.53
Physical capital intensity	642,045	0.30	0.30	0.00	0.23	0.94
Share of blue-collar workers	642,045	0.04	0.04	0.00	0.00	1.00
Profitability	642,045	0.04	0.04	-0.70	0.03	0.54
Publicly listed firms dummy	642,045	0.00	0.00	0.00	0.00	1.00
Average number of employees	642,045	20	424	1	4	198753

Table 2:
Do trade creditors increase employment risk?

This Table reports the marginal effects of the explanatory variables on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the variables are in Section 2 of this paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.541*** (51.33)	0.058*** (11.82)
Works council	0.053*** (22.09)	0.018*** (28.05)
Share of permanent workers	-0.022*** (-7.21)	0.012*** (4.30)
Average employee pay	0.035*** (23.60)	0.001 (0.88)
Firm age	0.007*** (11.10)	0.008*** (17.98)
Firm size	0.041*** (92.94)	0.014*** (53.48)
Labor productivity	0.000*** (-35.21)	-0.000*** (-21.74)
Financial distress	-0.003*** (-28.42)	-0.001*** (-11.32)
Asset tangibility	-0.030*** (-15.91)	-0.005*** (-4.74)
Share of blue-collars workers	-0.025*** (-5.72)	-0.010*** (-3.28)
Profitability	0.048*** (12.42)	0.010*** (4.78)
Publicly traded firm	-0.036*** (-3.74)	-0.013*** (-4.75)
Firm-year observations	487,410	487,410
Pseudo R2	0.507	0.469

Table 3:
What is different between firms with or without a work council?

This Table reports the mean and the corresponding observations for Belgian firms from 2004 to 2010 by the work council. We also present the p-value of the t-test of whether the means of the variables are significantly different by works council in the final column of this Table. Definitions of the variables are in Section 2 of this paper.

	Firms without a work council		**Firms with a work council**			
	Nobs	**Mean**	**Nobs**	**Mean**	**Diff.**	**p-val.**
Employee layoff	632,206	0.06	9,839	0.85	-0.79	0.00
More early retirements	632,206	0.00	9,839	0.23	-0.23	0.00
Leverage	632,206	0.70	9,839	0.62	0.08	0.00
Trade debt	632,206	0.30	9,839	0.34	-0.04	0.00
Share of permanent workers	632,206	0.94	9,839	0.94	0.00	0.05
Average employee pay	632,206	10.45	9,839	10.85	-0.40	0.00
Firm age	632,206	2.63	9,839	3.29	-0.66	0.00
Firm size	632,206	8.66	9,839	12.37	-3.71	0.00
Labor productivity	632,206	72,893.35	9,839	93,896.15	-21,003.20	0.00
Financial distress	632,206	2.62	9,839	2.51	0.11	0.01
Physical capital intensity	632,206	0.30	9,839	0.24	0.06	0.00
Share of blue-collar workers	632,206	0.04	9,839	0.01	0.03	0.00
Profitability	632,206	0.04	9,839	0.04	0.00	0.01
Publicly listed firms dummy	632,206	0.00	9,839	0.02	0.02	0.00
Average number of employees	632,206	14	9,839	367	353	0.00

Table 4:
Are works councils able to prevent trade creditors to discipline employees by increasing unemployment risk?

This Table reports the cross derivative of trade debt and works council on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation with the interaction term works council x trade debt. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the variables are in Section 2 of this paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.544*** (52.60)	0.060*** (13.32)
Works council	0.116*** (16.92)	0.035*** (17.61)
Firm control variables	Yes	Yes
Firm-year observations	487,410	487,410
Pseudo R2	0.509	0.472

Table 5:
Characteristics of the employee representation within the Work Council

Table 5 presents summary statistics of the determinants of employee coalition within the Work Council for all the sample firms with a Work Council from 2004 to 2010. The political and socio-economic determinants of the employee representation within the Work Council are defined in Section 3. All variables are winsorized at the first percentile.

	Obs.	Mean	Std. Dev.	Min	Max
Panel A: The political determinants of the employee representation					
Share of employee leadership from socialist party	9,176	0.20	0.23	0.00	1
Employee leadership specialization	9,176	0.46	0.27	0.05	1
Number of different employee representation unions	9,176	3	0.26	3	5
Average share of members within the employee representation	9,176	0.30	0.08	0.14	0.45
Range of number of different employee representation unions	9,176	0.68	0.19	0.33	1.00
Panel B: The socio-economic determinants of the employee representation					
A. Educated female representation within the employee coalition within the Works Council					
Share of female educated members within the employee representation	9,176	0.14	0.19	0.00	0.83
Average share of female educated members within the employee representation	9,176	0.03	0.04	0.00	0.17
Dispersion of the share of female educated members within the employee representation	9,176	0.05	0.07	0.00	0.32
The range of the share of female educated members within the employee representation	9,176	0.11	0.15	0.00	0.71
B. Labor worker representation within the employee coalition within the Works Council					
Share of labor worker members within the employee representation	9,176	0.38	0.30	0.00	1.00
Average of the share of labor worker members within the employee representation	9,176	0.13	0.10	0.00	0.33
Dispersion of labor worker members within the employee representation	9,176	0.15	0.18	0.00	0.58
The range of the share of labor worker members within the employee representation	9,176	0.10	0.15	0.00	0.71
C. Young worker representation within the employee coalition within the Works Council					
Share of young worker members within the employee representation	9,176	0.38	0.30	0.00	1.00
Average share of the young worker members within the employee representation	9,176	0.09	0.11	0.00	0.33
Dispersion of young worker members within the employee representation	9,176	0.11	0.12	0.00	0.58
The range of the share of young worker members within the employee representation	9,176	0.20	0.23	0.00	1.00

Table 6:
The effect of political determinants on the relationship between trade debt and employment risk

This Table reports the cross derivative of trade debt and political determinants on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation with the interaction term political determinant x trade debt. The sample consists of only firms with a works council. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the firm-specific variables are in Section 2 of this paper. Definitions of the political determinants of the employee-leadership coalition of the works council are in Section 3 of the paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.098*** (3.47)	0.017 (0.42)
The number of parties represented in the employee leadership coalition	-0.029*** (-3.33)	-0.070*** (-4.810
Firm control variables	Yes	Yes
Firm-year observations	7,578	7,578
Pseudo R2	0.153	0.099
Trade debt	0.100*** (3.48)	-0.013 (-0.32)
The political dispersion of the employee leadership coalition	-0.205*** (-3.41)	-0.558*** (-5.37)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.165	0.097
Trade debt	0.100*** (3.48)	0.012 (0.29)
The political range of the employee leadership coalition	-0.081*** (-3.15)	-0.236*** (-5.44)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.165	0.097
Trade debt	0.100*** (3.49)	0.012 (0.29)
The degree of party specialization of the employee leadership coalition	-0.055*** (-3.20)	-0.171*** (-5.67)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.165	0.097

Trade debt	0.020 (0.21)	-0.524*** (-3.44)
Share of employee leadership coalition from the socialist labor union	0.021 (1.04)	0.036 (1.11)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.158	0.094

Table 7:
The effect of socio-economic (gender) determinants on the relationship between trade debt and employment risk

This Table reports the cross derivative of trade debt and socio-economic (gender) determinants on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation with the interaction term socio-economic (gender) determinant x trade debt. The sample consists of only firms with a works council. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the firm-specific variables are in Section 2 of this paper. Definitions of the socio-economic (gender) determinants of the employee-leadership coalition of the works council are in Section 3 of the paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.106*** (3.55)	0.019 (0.46)
Share of female educated employee representation	0.057* (1.78)	-0.053 (-1.22)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.091
Trade debt	0.106*** (3.55)	0.019 (0.46)
Average share of female educated employee representation	0.283* (1.78)	-0.264 (-1.22)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.091
Trade debt	0.105*** (3.54)	0.017 (0.43)
The dispersion of the share of female educated employee representation	0.125 (1.47)	-0.211* (-1.76)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.091
Trade debt	0.105*** (3.54)	0.017 (0.42)
The range of the share of female educated employee representation	0.055 (1.43)	-0.097* (-1.80)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.092

Table 8:
The effect of socio-economic (occupational status) determinants on the relationship between trade debt and employment risk

This Table reports the cross derivative of trade debt and socio-economic (occupational status) determinants on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation with the interaction term socio-economic (occupational status) determinant x trade debt. The sample consists of only firms with a works council. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the firm-specific variables are in Section 2 of this paper. Definitions of the socio-economic (occupational status) determinants of the employee-leadership coalition of the works council are in Section 3 of the paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.102*** (3.50)	0.021 (0.52)
Share of blue-collar worker representation	0.013 (0.87)	0.023 (0.97)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.161	0.091
Trade debt	0.102*** (3.50)	0.021 (0.52)
Average share of blue-collar worker representation	0.041 (0.87)	0.070 (0.97)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.161	0.091
Trade debt	0.101*** (3.49)	0.020 (0.49)
The dispersion of blue-collar worker representation	-0.002 (-0.05)	-0.067 (-1.14)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.161	0.091
Trade debt	0.104*** (3.52)	0.017 (0.42)
The range of blue-collar worker representation	0.045 (1.26)	-0.116** (-2.26)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.092

Table 9:
The effect of socio-economic (age of employee) determinants on the relationship between trade debt and employment risk

This Table reports the cross derivative of trade debt and socio-economic (age of employee) determinants on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation with the interaction term socio-economic (age of employee) determinant x trade debt. The sample consists of only firms with a works council. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. I use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the firm-specific variables are in Section 2 of this paper. Definitions of the socio-economic (age of employee) determinants of the employee-leadership coalition of the works council are in Section 3 of the paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.105*** (3.54)	0.004 (0.11)
Share of younger employee representation	-0.023 (-1.50)	0.147*** (6.26)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.098
Trade debt	0.105*** (3.54)	0.004 (0.11)
Average share of younger employee representation	-0.069 (-1.50)	0.441*** (6.26)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.162	0.098
Trade debt	0.106*** (3.59)	0.011 (0.28)
The dispersion of younger employee representation	-0.081** (-2.16)	0.234*** (3.78)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.163	0.094
Trade debt	0.106*** (3.58)	0.011 (0.27)
The range of younger employee representation	-0.044** (-2.18)	0.137*** (4.11)
Firm control variables	Yes	Yes
Firm-year observations	7,085	7,085
Pseudo R2	0.163	0.094

Table 10: What is different between firms that did or did not install a Work Council?

This Table reports the mean and the corresponding observations for Belgian firms with a Works Council and Belgian firms who did not install a Works Council while they were eligible to install a Works Council from 2004 to 2010. We also present the p-value of the t-test of whether the means of the variables between the two sample of firms are significantly different from zero in the final column of this Table. The definitions of the variables are in Section 2 of this paper.

	Firms refused to install a Work Council		**Firms with a Work Council**			
	Nobs	**Mean**	**Nobs**	**Mean**	**Diff.**	**p-val.**
Employee layoff	249	0.65	9,839	0.85	-0.20	0.00
More early retirements	249	0.22	9,839	0.46	-0.24	0.00
Leverage	249	0.67	9,839	0.62	0.05	0.01
Trade debt	249	0.33	9,839	0.34	-0.01	0.58
Share of permanent workers	249	0.95	9,839	0.94	0.01	0.43
Average employee pay	249	10.84	9,839	10.85	-0.01	0.86
Firm age	249	3.06	9,839	3.29	-0.23	0.00
Firm size	249	11.63	9,839	12.37	-0.74	0.00
Labor productivity	249	87024.62	9,839	93896.15	-6871.54	0.12
Financial distress	249	2.39	9,839	2.51	-0.12	0.70
Physical capital intensity	249	0.17	9,839	0.24	-0.07	0.00
Share of blue-collar workers	249	0.02	9,839	0.01	0.01	0.15
Profitability	249	0.04	9,839	0.04	0.00	0.82
Publicly listed firms dummy	249	0.01	9,839	0.02	-0.01	0.22
Average number of employees	249	399	9,839	367	32	0.58

Table 11: Do trade creditors threat buying-firms that refused to install a works council differently in the protection of their claims?

This Table reports the cross derivative of trade debt and works council on the conditional probability of employee layoffs in model 1 and more early retirement in model 2 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled logistic regression estimation with the interaction term works council x trade debt. The sample consists of only firms with a works council or refused to install a works council. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level. Definitions of the firm-specific variables are in Section 2 of this paper.

	(1) Employee layoffs	(2) More early retirements
Trade debt	0.100*** (3.55)	0.022 (0.58)
Works council	0.071** (2.23)	0.175*** (3.65)
Firm control variables	Yes	Yes
Firm-year observations	7,755	7,755
Pseudo R2	0.160	0.100

Table 12: Endogeneity – Instrumental variable probit regressions

We present the cross derivative of trade debt and works council on the conditional probability of employee layoffs in model 1 and more early retirement in model 3 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the pooled probit regression estimation. Standard errors are robust for heteroskedasticity and clustered at firm level. We report the pseudo R2 from these pooled logistic regression models in the final row of this Table.

We also present the cross derivative of trade debt and works council on the conditional probability of employee layoffs in model 2 and more early retirement in model 4 when the remaining explanatory variables are kept at their sample values. Standard errors are calculated by using the Delta-method. We report z-statistics in parentheses below each marginal effect estimate. The calculation of the marginal effects is based on the instrumental variable probit regression estimation. The endogenous variables are works council and trade debt. We use three instruments: namely firm's exposure to the works council law in Belgium, the firm's exposure to the commercial law in Belgium, and the industry average exposure to the commercial law in Belgium. The instrumental variable probit regression model also includes the workforce control variables and other firm-level control variables. All variables in the instrumental probit regression model are defined in Section 2 of the paper, except for the instrumental variables. The instrumental variables are defined in Section 4 of the paper. The pseudo R2 is unavailable for the instrumental variable regression. As a result, we report the p-value of the Wald chi2 statistics in this Table. Standard errors are robust for heteroskedasticity and clustered at firm level. We use asterisks to denote statistical significance at 1% (***), 5% (**), or 10% (*) level.

	Employee layoffs		More early retirements	
	(1)	(2)	(3)	(4)
	PROBIT	IVPROBIT	PROBIT	IVPROBIT
Trade debt	0.036***	4.405***	0.005***	2.394***
	(20.00)	(8.67)	(8.64)	(9.64)
Works council	0.069***	2.816***	0.010***	8.094***
	(28.38)	(18.06)	(20.95)	(20.44)
Firm control variables	Yes	Yes	Yes	Yes
Firm-year observations	487,410	487,410	487,410	487,410
Pseudo R2	0.488		0.391	
Prob > chi2	0.0000	0.0000	0.0000	0.0000